



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

US EPA Region 5 LSASD Analytical Services Branch

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: 4/28/2022

Title: ASB Data Report for 3M Cordova

To: Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604

From: Lawrence Zintek, Chemist
zintek.lawrence@epa.gov
US EPA Region 5 LSASD Analytical Services Branch

The results reported in this document apply to the samples as received and relate only to the items tested. The data transmitted under this cover memo successfully passed the data review process and applicable Analytical Services Branch (ASB) laboratory Standard Operating Procedures. In accordance with the EPA QA/G-8 *Guidance on Environmental Data Verification and Data Validation*, ASB performs data verification on all the data generated internally. ASB does not perform data validation or quality assessment procedures.

This report was reviewed and the information provided herein accurately represents the analysis performed.

Please contact the analyst with any technical report issues, Amanda Wroble at (312)-353-0375 for sample project concerns, and Robert Snyder at (312)-353-9083 with data transmittal questions. Thank you.

Attached are Results for: 3M Cordova

Analyses included in this report:

PFASNEW1600

PFASNEW1600

Report Name: 2202010 OSRTI PFC FINAL Apr 28 22 0837



Environmental Protection Agency Region 5

US EPA Region 5 LSASD Analytical Services Branch

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60604

Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

ANALYSIS CASE NARRATIVE

General Information

Seven water and six soil samples were received 2/25/2022 for per- and polyfluoroalkyl substances (PFAS) analysis. The arbitrary 28 day holding time for this analysis was met. The designated analyst for these samples, Larry Zintek, can be reached at (312) 886-2925.

The preliminary report named 2202010 OSRTI PFC DRAFT Mar 16 22 1601 submitted on March 16, 2022, was a draft and subject to change upon final data verification procedures, this file is near the end of the associated Level 4 data package. The sample analysis results provided in the preliminary results may have changed and are superseded with the information in this final report.

Sample Analysis and Results

Sample preparation and analysis for waters occurred following R5 ASB SOP OM024 Ver. 1 and for soils sample preparation and analysis occurred without an approved Standard Operating Procedure for the expanded list of PFAS analytes. Region 5 Analytical Services Branch standard operating procedure R5 ASB SOP OM022 Ver. 2 and R5 ASB SOP OM024 Ver. 1 served as a guide to conduct the analysis of soils and will data be qualified "Research". Refer to client contact ID#'s 27448, 28304 and Form 13 #27409 for this sample request and is summarized below.

A project planning meeting was held 11/10/21 @ 1:30 pm CT with the client (Jennifer Wilson, ECAD), the OM Group, the LSASD Division Director, the ASB Sample Custodian, and the ASB Sample Coordinator about the PFAS enforcement sampling event for the 3M Cordova project. What was discussed and agreed to is documented in the attachment.

To summarize, the client was made explicitly aware of and agreed to the following:

- 1.) All the samples would exceed the preliminary 28-day hold time and the resulting data will be flagged estimated
- 2.) The expanded PFAS in water SOP (OM024) is not yet published, but the water samples will be prepared and preliminary data provided anyway. However, final, peer-reviewed data cannot be reported until SOP OM024 is published. [see Form 013 #27409]
- 3.) The expanded list PFAS analytes in soil will be reported as 'RESEARCH' as an SOP and validation of these compounds in soil does not yet exist.

The client was notified that:



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- 1.) Data reported from sample 'DPT-24-O-3' (LIMS ID 2202010-06) will be flagged estimated ("J") due to sampling containers of unknown origin being used to collect that sample (not the sampling containers that the R5 ASB provided).
- 2.) Analyses for samples 'Equipment Blank' (LIMS ID 2202010-14) and 'Field Blank' (LIMS ID 2202010-15) will be cancelled as incorrect sampling containers and sample volumes were collected in the field.
- 3.) As negotiated with the client, analyses in samples 'DPT-21-MS', 'DPT-21-MSD', 'DPT-21-GW-MS', and 'DPT-21-GW-MSD' (LIMS IDs 2202010-12, -13, 16, and -17) will be cancelled as these chain of custody line items were incorrectly inputted onto the chain of custody; these sampling containers were added to samples 'DPT-21-O-3' (LIMS ID 2202010-03) and 'DPT-21-GW' (LIMS ID 2202010-08) so that matrix QC data could ultimately be provided to the client.

A client (Jennifer Wilson, ECAD) requested the expanded PFAS analysis in water (draft SOP OM024) for samples that are currently arriving at the laboratory (3M Cordova project). SOP OM024 has not been published yet and the corresponding validation IDOC has not been approved yet (both are in second review). The current versions of both ASB Policy #010 (Demonstration of Capability) and #019 (SOPs) state that an IDOC must be approved and a new laboratory test method must have an approved SOP before samples can be analyzed. Getting a brand-new SOP published in Qualtrax is a bit of a lengthy process, so the OM Group would like to be able to start processing these samples while the SOP and corresponding validation IDOC make their way through the approval process. No affected samples will be reported (final, peer-reviewed data) until both the SOP and validation IDOC are officially published/approved.

All PFAS field samples were prepared, analyzed and reported in duplicate due to erratic PFAS contamination present in consumables required to perform this procedure. All Quality Control data, including Duplicate results, should be evaluated by the user before any decision about the quality of the data and use.

Through extensive testing of several brands and part numbers of various consumables required for PFAS sample collection, preparation, and analysis for this analysis, it has been determined that obtaining consistently trace-level, PFAS-free products is unlikely. However, the sporadic PFAS contamination currently observed is predominately low-level (at or near the reporting limit) and only appears to occur in <2% of consumables tested. Requiring duplicate sample collection, preparation, and analysis provides the needed assurance that the PFAS values reported here are both precise and accurate. The replicate field sample data has to be evaluated by the user to identify biased high or false positive results.

However, caution should still be taken by data users when evaluating low-level PFAS results in terms of project decision making. Data users should also consider that replicate PFAS samples are co-located and data variability between replicates may occur based on the co-located nature of replicate PFAS sampling. In the report, field sample replicates are indicated using the labels "RE1" (e.g. the replicate preparations/analyses for field sample 2202010-03 will be labeled 2202010-03RE1).



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PFPrA elutes early, only has one MRM transition and does not have an isotope to evaluate recovery or peak shape to compare to the native. Since this is the case it is very difficult to identify anything that is co-eluting with PFPrA and make a proper evaluation, please be aware.

Since PFAS contamination has become an issue with this analysis all field samples were taken in duplicates. The complete data package and replicates need to be evaluated by the user in order to make sound conclusions. NO DATA SHOULD BE USED BELOW THE REPORTING LIMIT, this method was only evaluated or tested to the reporting limit. The QC samples report data below the reporting limit for QC purposes, any data below the reporting limit should not be used.

The data reported herein meets the requirements referenced in the SOP(s) used for analysis and laboratory specifications except for those stated in the QC section below.

Quality Control

All quality control audits not mentioned below were within the analyst's professional judgement evaluation and SOP criteria and did not result in qualification of the data. See the report for detailed QC results.

Calibration Curve

The calibration curves used for all PFHpA data contained a very biased high concentration at Level 2, most likely caused by contamination of PFHpA in that vial/cap. A point inside the calibration curve can't be excluded, so both the Level 1 and 2 points were excluded. The Level 1 point when evaluated against the abbreviated curve was well within tolerance. Therefore, the reporting limit was raised to 40 ng/L for water. According to the analyst's judgment, there were no detects at or above the original reporting limit of 10 ng/L in the water site samples for PFHpA. Any detects below a 100 ng/kg for soil were reported but qualified estimated, "J" and of course "Research" since no approved SOP exists at this time.

Qualitative Identification

For any analyte, when the ion ratio limit of $\pm 30\%$ is exceeded, the affected data are qualified 'I'.

Batch B22C009

Surrogate Recovery

Sample B22C009-BLK1 was slightly biased low for M5PFHxA, M8PFOA, M9PFNA, M8PFOS, M6PFDA,



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M7PFUnA, MPFDoA, M4:2FTS, M6:2FTS, M8:2FTS, M3PFBS, M4PFHpA, M2PFTreA and M8PFOSA. The data were qualified appropriately in affected sample.

Blank Spike/Blank Spike Duplicate

B22C009-BS1 was slightly biased low for PFDoA, PFUnA, PFDA, PFOS, PFNA, PFOA, PFHxS, PFHpA, PFHxA, PFBS and PFPeA. No qualifications were required.

Relative Percent Difference (RPD)

The RPD failed in B22C009-BS1 for the following analytes due to low bias in B22C009-BS1: PFTriA, PFDoA, PFUnA, PFDA, PFOS, PFNA, PFOA, PFHxS, PFHpA, PFHxA, PFBS, PFPeA, PFBA and PFTreA. No qualifications were required.

The RPD was not evaluated between the sample the re-extract. The "Q" flags associated with RPD failures are not evaluated when the native sample and lab duplicate are both below the RL. The "Q" issued in these cases are an automated entry of the LIMS system and should be ignored. PFAS contamination may occur affecting the RPD. All data should be evaluated by the user before use.

Method Reporting Limit Check(s) (MRL)

PFOS was biased high in B22C009-MRL2. No qualifications were required.

Method Blank(s)

B22C009-BLK2 contained PFOS at 17.7 ng/L. The reporting limit was raised to 13 ng/L for sample 2202010-09RE1 and 15 ng/L for sample 2202010-08 (These are nominal concentrations.), just above detection of PFOS in those samples.

Batch B22C010

Method Blank(s)

B22C010-BLK1 contained PFEESA at 23.7 ng/kg and B22C010-BLK2 contained PFEESA at 25.3 ng/kg. The reporting limit was raised. B22C010-BLK2 contained HQ-115 at 17.3 ng/kg, sample 2202010-06RE1 for HQ-115 was qualified estimated, "J" since it was within three times the blank contamination.



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Surrogate Recovery

Samples 2202010-01, -03, -03RE1, -04 and -05 and B22C010-DUP1, -MS1 and -MSD1 were biased low for D7-N-MeFOSE and D9-N-EtFOSE. Samples 2202010-01RE1, -02, -02RE1 and -06RE1 were biased low for D7-N-MeFOSE, D9-N-EtFOSE and M2PFTreA. Sample 2202010-04RE1 was biased low for D9-N-EtFOSE. Sample 2202010-05RE1 was biased low for D7-N-MeFOSE and D9-N-EtFOSE and biased high for MPFBA and M8:2FTS. Sample 2202010-06 was biased low for D7-N-MeFOSE, D9-N-EtFOSE and M2PFTreA and biased high for MPFBA. Data are appropriately qualified

The data were qualified appropriately in affected samples.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

B22C010-MS1 and -MSD1 were biased low for N-MeFOSE, N-EtFOSE and PFMPA. Data are appropriately qualified.

Method Reporting Limit Check(s)

B22C010-MRL1 was biased low for PFDS, PFNS, PFHxA, PFPeS, FOSA, 4:2FTS, N-MeFOSAA, 5:3 FTCA, PFDoS, N-MeFOSA, N-MeFOSE, ADONA, 11Cl-PF3OUds, NFDHA, 3:3 FTCA and FHUEA. B22C010-MRL2 was biased high for PFEESA. No data qualification was required.

Relative Percent Difference (RPD)

The RPD failed for PFMPA for B22C010-MSD1, data are qualified correctly.

The RPD was not evaluated between the sample the re-extract. The "Q" flags associated with RPD failures are not evaluated when the native sample and lab duplicate are both below the RL. The "Q" issued in these cases are an automated entry of the LIMS system and should be ignored. PFAS contamination may occur affecting the RPD. All data should be evaluated by the user before use.



Environmental Protection Agency Region 5
Chicago Regional Laboratory

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WORK ORDER

Printed: 3/22/2022 12:48:02PM

2202010

US EPA Region 5 LSASD Analytical Services Branch

Client: Water Division, US EPA Region 5
Project: 3M Cordova

Project Manager: Angela Ockrassa Davis
Project Number: [none]

Report To:

Jennifer Wilson
Water Division, US EPA Region 5

77 West Jackson Boulevard
Chicago, IL 60604

Phone: (312) 353-3115
Fax: (312) 886-2001

Date Due: May-26-22 15:00 (90 day TAT)

Received By: Robert Snyder

Date Received: Feb-25-22 15:30

Logged In By: Robert Snyder

Date Logged In: Feb-28-22 12:08

Sample tags/labels	Yes	Work Order Comments:
Seals Intact	Yes	-Sampling containers provided by R5 ASB
Received on ice	Yes	-Preliminary results requested ASAP
Paperwork Included	Yes	-All soil analytes must be flagged RESEARCH (no SOP)
		-Water analysis cannot be reported until SOP OM024 published (Form 013 #27409)
		-See CC #27448 & #28304

Cooler(s) information:

Default Cooler - 0.90 C

Sample ID: [2202010-01](#) **Sampled:** [Feb-21-22 14:15](#) **Matrix:** [Soil](#)

Sample Name: [DPT-28-O-3](#) **Sample Location/Comments:**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
PFASNEW1600	28	Mar-21-22 14:15	
Total Dry Solids 105C	7	Feb-28-22 14:15	

Sample ID: [2202010-02](#) **Sampled:** [Feb-21-22 12:00](#) **Matrix:** [Soil](#)

Sample Name: [DPT-20-O-3](#) **Sample Location/Comments:**

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
PFASNEW1600	28	Mar-21-22 12:00	
Total Dry Solids 105C	7	Feb-28-22 12:00	

Sample ID: [2202010-03](#) **Sampled:** [Feb-21-22 17:25](#) **Matrix:** [Soil](#) [OC Source Sample MS/MSD](#)

Sample Name: [DPT-21-O-3](#) **Sample Location/Comments:**

Sample Comments: [MS/MSD](#)

Analysis	Hold time (days)	Expires	Comments
PFASNEW1600	28	Mar-21-22 17:25	

2202010

US EPA Region 5 LSASD Analytical Services Branch

Client: Water Division, US EPA Region 5

Project: 3M Cordova

Project Manager: Angela Ockrassa Davis

Project Number: [none]

Sample ID: [2202010-03](#) Sampled: [Feb-21-22 17:25](#) Matrix: [Soil](#) [OC Source Sample MS/MSD](#)Sample Name: [DPT-21-O-3](#)

Sample Location/Comments:

Sample Comments: [MS/MSD](#)

Analysis	Hold time (days)	Expires	Comments
Total Dry Solids 105C	7	Feb-28-22 17:25	

Sample ID: [2202010-04](#) Sampled: [Feb-22-22 10:50](#) Matrix: [Soil](#)Sample Name: [DPT-22-O-3](#)

Sample Location/Comments:

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
PFASNEW1600	28	Mar-22-22 10:50	
Total Dry Solids 105C	7	Mar-01-22 10:50	

Sample ID: [2202010-05](#) Sampled: [Feb-22-22 16:10](#) Matrix: [Soil](#)Sample Name: [DPT-23-O-3](#)

Sample Location/Comments:

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
PFASNEW1600	28	Mar-22-22 16:10	
Total Dry Solids 105C	7	Mar-01-22 16:10	

Sample ID: [2202010-06](#) Sampled: [Feb-23-22 11:10](#) Matrix: [Soil](#)Sample Name: [DPT-24-O-3](#)

Sample Location/Comments:

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
PFASNEW1600	28	Mar-23-22 11:10	
Total Dry Solids 105C	7	Mar-02-22 11:10	

Sample ID: [2202010-07](#) Sampled: [Feb-21-22 14:45](#) Matrix: [Water](#)Sample Name: [DPT-28-GW](#)

Sample Location/Comments:

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
PFASNEW1600	28	Mar-21-22 14:45	

2202010

US EPA Region 5 LSASD Analytical Services Branch

Client: Water Division, US EPA Region 5

Project: 3M Cordova

Project Manager: Angela Ockrassa Davis

Project Number: [none]

Sample ID: [2202010-08](#) Sampled: [Feb-21-22 17:00](#) Matrix: [Water](#) [OC Source Sample MS/MSD](#)Sample Name: [DPT-21-GW](#)

Sample Location/Comments:

Sample Comments: [MS/MSD](#)

Analysis	Hold time (days)	Expires	Comments
PFASNEW1600	28	Mar-21-22 17:00	

Sample ID: [2202010-09](#) Sampled: [Feb-22-22 12:20](#) Matrix: [Water](#)Sample Name: [DPT-22-GW](#)

Sample Location/Comments:

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
PFASNEW1600	28	Mar-22-22 12:20	

Sample ID: [2202010-10](#) Sampled: [Feb-23-22 13:00](#) Matrix: [Water](#)Sample Name: [DPT-23-GW](#)

Sample Location/Comments:

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
PFASNEW1600	28	Mar-23-22 13:00	

Sample ID: [2202010-11](#) Sampled: [Feb-23-22 10:25](#) Matrix: [Water](#)Sample Name: [DPT-24-GW](#)

Sample Location/Comments:

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
PFASNEW1600	28	Mar-23-22 10:25	

Sample ID: [2202010-12](#) Sampled: [Feb-21-22 17:30](#) Matrix: [Soil](#)Sample Name: [DPT-21-MS](#)

Sample Location/Comments:

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
[NO ANALYSES]			

2202010

US EPA Region 5 LSASD Analytical Services Branch

Client: Water Division, US EPA Region 5

Project: 3M Cordova

Project Manager: Angela Ockrassa Davis

Project Number: [none]

Sample ID: [2202010-13](#) Sampled: [Feb-21-22 17:30](#) Matrix: [Soil](#)Sample Name: [DPT-21-MSD](#)

Sample Location/Comments:

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
[NO ANALYSES]			

Sample ID: [2202010-14](#) Sampled: [Feb-22-22 12:40](#) Matrix: [Water](#)Sample Name: [Equipment Blank](#)

Sample Location/Comments:

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
[NO ANALYSES]			

Sample ID: [2202010-15](#) Sampled: [Feb-21-22 12:10](#) Matrix: [Water](#)Sample Name: [Field Blank](#)

Sample Location/Comments:

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
[NO ANALYSES]			

Sample ID: [2202010-16](#) Sampled: [Feb-21-22 17:10](#) Matrix: [Water](#)Sample Name: [DPT-21-GW-MS](#)

Sample Location/Comments:

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
[NO ANALYSES]			

Sample ID: [2202010-17](#) Sampled: [Feb-21-22 17:10](#) Matrix: [Water](#)Sample Name: [DPT-21-GW-MSD](#)

Sample Location/Comments:

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
[NO ANALYSES]			

2202010

US EPA Region 5 LSASD Analytical Services Branch

Client: Water Division, US EPA Region 5

Project: 3M Cordova

Project Manager: Angela Ockrassa Davis

Project Number: [none]

Sample ID: [2202010-18](#) Sampled: [Feb-22-22 10:28](#) Matrix: [Water](#)Sample Name: [Field Blank - GW](#)

Sample Location/Comments:

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
PFASNEW1600	28	Mar-22-22 10:28	

Sample ID: [2202010-19](#) Sampled: [Feb-23-22 12:05](#) Matrix: [Water](#)Sample Name: [Equipment Blank - GW](#)

Sample Location/Comments:

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
PFASNEW1600	28	Mar-23-22 12:05	

WORK ORDER MEMO: IR # 28268

REVIEWED*By Danielle Kleinmaier at 12:51 pm, Mar 22, 2022*

Reviewed By

Date



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Reported:
Apr-28-22 08:37

Analysis by LC MS MS

US EPA Region 5 LSASD Analytical Services Branch

DPT-28-GW (2202010-07)

Matrix: Water

Sampled: Feb-21-22 14:45

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorotridecanoate	U			10.1	ng/L	1	B22C009	Mar-09-22	Mar-09-22
perfluorododecanoate	U			10.1	"	"	"	"	"
perfluoroundecanoate	U			10.1	"	"	"	"	"
perfluorodecanoate	U			10.1	"	"	"	"	"
perfluorooctyl sulfonate	U			10.1	"	"	"	"	"
perfluorononanoate	U			10.1	"	"	"	"	"
perfluorooctanoate	U			10.1	"	"	"	"	"
perfluorohexyl sulfonate	U			10.1	"	"	"	"	"
perfluoroheptanoate	U			40.3	"	"	"	"	"
perfluorohexanoate	U			10.1	"	"	"	"	"
perfluorobutyl sulfonate	16.7			10.1	"	"	"	"	"
perfluoropentanoate	59.6			50.3	"	"	"	"	"
perfluorobutanoate	635			50.3	"	"	"	"	"
perfluorotetradecanoate	U			10.1	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U			10.1	"	"	"	"	"
NMeFOSA	U			10.1	"	"	"	"	"
NEtFOSA	U			10.1	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	U			10.1	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U			10.1	"	"	"	"	"
NMeFOSE	U			10.1	"	"	"	"	"
NEtFOSE	U			10.1	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	U			10.1	"	"	"	"	"
HFPO-DA	U			10.1	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	U			10.1	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U			10.1	"	"	"	"	"
ADONA	U			10.1	"	"	"	"	"
9Cl-PF3ONS	U			10.1	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	U			10.1	"	"	"	"	"
11Cl-PF3OUdS	U			10.1	"	"	"	"	"
N-MeFOSAA	U			10.1	"	"	"	"	"
N-EtFOSAA	U			10.1	"	"	"	"	"
NFDHA	U			10.1	"	"	"	"	"



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 Project Manager: Jennifer Wilson

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Analysis by LC MS MS
US EPA Region 5 LSASD Analytical Services Branch

DPT-28-GW (2202010-07) Matrix: Water Sampled: Feb-21-22 14:45 Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluoro-1-decanesulfonate (PFDS)	U			10.1	ng/L	1	B22C009	Mar-09-22	Mar-09-22
PFEESA	U			10.1	"	"	"	"	"
PFMPA	15.6			10.1	"	"	"	"	"
PFMBA	U			10.1	"	"	"	"	"
3:3 FTCA	U			10.1	"	"	"	"	"
5:3 FTCA	U			10.1	"	"	"	"	"
7:3 FTCA	U			10.1	"	"	"	"	"
FHUEA	U			10.1	"	"	"	"	"
FOUEA	U			10.1	"	"	"	"	"
HQ-115	24.7			10.1	"	"	"	"	"
PFPPrA	1840			101	"	2	"	"	Mar-11-22
PFDoS	U			10.1	"	1	"	"	Mar-09-22

Surrogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
<i>D-N-EtFOSA</i>	129	79.6%	70-130	"	"	"
<i>D-N-MEFOSA</i>	136	84.1%	70-130	"	"	"
<i>D7-N-MeFOSE</i>	138	84.9%	70-130	"	"	"
<i>D9-N-EtFOSE</i>	133	81.9%	70-130	"	"	"
<i>MHFPO-DA</i>	143	88.3%	70-130	"	"	"
<i>MPFBA</i>	172	106%	70-130	"	"	"
<i>M5PFHxA</i>	144	88.7%	70-130	"	"	"
<i>M3PFHxS</i>	138	90.3%	70-130	"	"	"
<i>M8PFOA</i>	143	88.2%	70-130	"	"	"
<i>M9PFNA</i>	143	87.9%	70-130	"	"	"
<i>M8PFOS</i>	136	87.8%	70-130	"	"	"
<i>M6PFDA</i>	142	87.6%	70-130	"	"	"
<i>M7PFUnA</i>	141	87.0%	70-130	"	"	"
<i>MPFDaA</i>	140	86.1%	70-130	"	"	"
<i>perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS</i>	117	77.4%	70-130	"	"	"
<i>perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS</i>	119	77.5%	70-130	"	"	"
<i>perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS</i>	125	80.3%	70-130	"	"	"
<i>D5-N-EtFOSAA</i>	151	93.3%	70-130	"	"	"
<i>D3-N-MeFOSAA</i>	138	84.9%	70-130	"	"	"
<i>M3PFBS</i>	134	89.1%	70-130	"	"	"
<i>M5PFPeA</i>	153	94.7%	70-130	"	"	"



Environmental Protection Agency Region 5

US EPA Region 5 LSASD Analytical Services Branch

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Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

Analysis by LC MS MS

US EPA Region 5 LSASD Analytical Services Branch

DPT-28-GW (2202010-07)

Matrix: Water

Sampled: Feb-21-22 14:45

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
M4PFHpA	143			87.9%		70-130	B22C009	Mar-09-22	Mar-09-22
M2PTreA	124			76.3%		64.4-130	"	"	"
M8PFOSA	141			87.0%		70-130	"	"	"

DPT-28-GW (2202010-07RE1)

Matrix: Water

Sampled: Feb-21-22 14:45

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorotridecanoate	U			10.0	ng/L	1	B22C009	Mar-09-22	Mar-09-22
perfluorododecanoate	U			10.0	"	"	"	"	"
perfluoroundecanoate	U			10.0	"	"	"	"	"
perfluorodecanoate	U			10.0	"	"	"	"	"
perfluorooctyl sulfonate	U			10.0	"	"	"	"	"
perfluorononanoate	U			10.0	"	"	"	"	"
perfluorooctanoate	U			10.0	"	"	"	"	"
perfluorohexyl sulfonate	U			10.0	"	"	"	"	"
perfluoroheptanoate	U			40.0	"	"	"	"	"
perfluorohexanoate	10.3			10.0	"	"	"	"	"
perfluorobutyl sulfonate	17.8			10.0	"	"	"	"	"
perfluoropentanoate	59.6			50.0	"	"	"	"	"
perfluorobutanoate	643			50.0	"	"	"	"	"
perfluorotetradecanoate	U			10.0	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U			10.0	"	"	"	"	"
NMeFOSA	U			10.0	"	"	"	"	"
NEtFOSA	U			10.0	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	U			10.0	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U			10.0	"	"	"	"	"
NMeFOSE	U			10.0	"	"	"	"	"
NEtFOSE	U			10.0	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	U			10.0	"	"	"	"	"
HFPO-DA	U			10.0	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	U			10.0	"	"	"	"	"



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Project: 3M Cordova
 Project Number: [none]
 Project Manager: Jennifer Wilson

Reported:
 Apr-28-22 08:37

Analysis by LC MS MS
US EPA Region 5 LSASD Analytical Services Branch

DPT-28-GW (2202010-07RE1)

Matrix: Water

Sampled: Feb-21-22 14:45

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U			10.0	ng/L	1	B22C009	Mar-09-22	Mar-09-22
ADONA	U			10.0	"	"	"	"	"
9CI-PF3ONS	U			10.0	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	U			10.0	"	"	"	"	"
11CI-PF3OUdS	U			10.0	"	"	"	"	"
N-MeFOSAA	U			10.0	"	"	"	"	"
N-EtFOSAA	U			10.0	"	"	"	"	"
NFDHA	U			10.0	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	U			10.0	"	"	"	"	"
PFEESA	U			10.0	"	"	"	"	"
PFMPA	15.4			10.0	"	"	"	"	"
PFMBA	U			10.0	"	"	"	"	"
3:3 FTCA	U			10.0	"	"	"	"	"
5:3 FTCA	U			10.0	"	"	"	"	"
7:3 FTCA	U			10.0	"	"	"	"	"
FHUEA	U			10.0	"	"	"	"	"
FOUEA	U			10.0	"	"	"	"	"
HQ-115	34.3			10.0	"	"	"	"	"
PFPrA	1870			100	"	2	"	"	Mar-11-22
PFDoS	U			10.0	"	1	"	"	Mar-09-22

Surrogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
<i>D-N-EtFOSA</i>	135	84.1%	70-130	"	"	"
<i>D-N-MEFOSA</i>	141	88.0%	70-130	"	"	"
<i>D7-N-MeFOSE</i>	140	87.5%	70-130	"	"	"
<i>D9-N-EtFOSE</i>	140	87.7%	70-130	"	"	"
<i>MHFPO-DA</i>	152	94.8%	70-130	"	"	"
<i>MPFBA</i>	171	107%	70-130	"	"	"
<i>M5PFHxA</i>	143	89.3%	70-130	"	"	"
<i>M3PFHxS</i>	136	89.5%	70-130	"	"	"
<i>M8PFOA</i>	141	88.3%	70-130	"	"	"
<i>M9PFNA</i>	144	90.0%	70-130	"	"	"
<i>M8PFOS</i>	135	88.0%	70-130	"	"	"
<i>M6PFDA</i>	141	88.3%	70-130	"	"	"
<i>M7PFUnA</i>	140	87.2%	70-130	"	"	"
<i>MPFDoA</i>	139	86.5%	70-130	"	"	"



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Project Number: [none]
Project Manager: Jennifer Wilson

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DPT-28-GW (2202010-07RE1)

Matrix: Water

Sampled: Feb-21-22 14:45

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	118			78.8%		70-130	B22C009	Mar-09-22	Mar-09-22
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	123			80.6%		70-130	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	127			82.6%		70-130	"	"	"
D5-N-EtFOSAA	148			92.7%		70-130	"	"	"
D3-N-MeFOSAA	140			87.1%		70-130	"	"	"
M3PFBS	133			89.3%		70-130	"	"	"
M5PFPeA	152			94.9%		70-130	"	"	"
M4PFHpA	143			89.2%		70-130	"	"	"
M2PTreA	125			78.3%		64.4-130	"	"	"
M8PFOSA	141			87.8%		70-130	"	"	"

DPT-21-GW (2202010-08)

Matrix: Water

Sampled: Feb-21-22 17:00

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorotridecanoate	U			10.0	ng/L	1	B22C009	Mar-09-22	Mar-09-22
perfluorododecanoate	U			10.0	"	"	"	"	"
perfluoroundecanoate	U			10.0	"	"	"	"	"
perfluorodecanoate	U			10.0	"	"	"	"	"
perfluorooctyl sulfonate	U			15.0	"	"	"	"	"
perfluorononanoate	U			10.0	"	"	"	"	"
perfluorooctanoate	U			10.0	"	"	"	"	"
perfluorohexyl sulfonate	U			10.0	"	"	"	"	"
perfluoroheptanoate	U			40.0	"	"	"	"	"
perfluorohexanoate	12.6			10.0	"	"	"	"	"
perfluorobutyl sulfonate	17.9			10.0	"	"	"	"	"
perfluoropentanoate	59.3			50.0	"	"	"	"	"
perfluorobutanoate	634			50.0	"	"	"	"	"
perfluorotetradecanoate	U			10.0	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U			10.0	"	"	"	"	"
NMeFOSA	U			10.0	"	"	"	"	"
NEtFOSA	U			10.0	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	U			10.0	"	"	"	"	"



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Project: 3M Cordova
 Project Number: [none]
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Reported:
 Apr-28-22 08:37

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US EPA Region 5 LSASD Analytical Services Branch

DPT-21-GW (2202010-08) Matrix: Water Sampled: Feb-21-22 17:00 Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U			10.0	ng/L	1	B22C009	Mar-09-22	Mar-09-22
NMeFOSE	U			10.0	"	"	"	"	"
NEtFOSE	U			10.0	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	U			10.0	"	"	"	"	"
HFPO-DA	U			10.0	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	U			10.0	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U			10.0	"	"	"	"	"
ADONA	U			10.0	"	"	"	"	"
9Cl-PF3ONS	U			10.0	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	U			10.0	"	"	"	"	"
11Cl-PF3OUdS	U			10.0	"	"	"	"	"
N-MeFOSAA	U			10.0	"	"	"	"	"
N-EtFOSAA	U			10.0	"	"	"	"	"
NFDHA	U			10.0	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	U			10.0	"	"	"	"	"
PFEESA	U			10.0	"	"	"	"	"
PFMPA	16.1			10.0	"	"	"	"	"
PFMBA	U			10.0	"	"	"	"	"
3:3 FTCA	U			10.0	"	"	"	"	"
5:3 FTCA	U			10.0	"	"	"	"	"
7:3 FTCA	U			10.0	"	"	"	"	"
FHUEA	U			10.0	"	"	"	"	"
FOUEA	U			10.0	"	"	"	"	"
HQ-115	25.7			10.0	"	"	"	"	"
PFPrA	1850			100	"	2	"	"	Mar-11-22
PFDoS	U			10.0	"	1	"	"	Mar-09-22
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
D-N-EtFOSA	134			83.8%		70-130	"	"	"
D-N-MEFOSA	142			88.6%		70-130	"	"	"
D7-N-MeFOSE	143			89.0%		70-130	"	"	"
D9-N-EtFOSE	135			84.0%		70-130	"	"	"
MHFPO-DA	150			93.7%		70-130	"	"	"
MPFBA	170			106%		70-130	"	"	"



Environmental Protection Agency Region 5
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Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

Analysis by LC MS MS
US EPA Region 5 LSASD Analytical Services Branch

DPT-21-GW (2202010-08) Matrix: Water Sampled: Feb-21-22 17:00 Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
M5PFHxA	143			89.0%		70-130	B22C009	Mar-09-22	Mar-09-22
M3PFHxS	137			90.3%		70-130	"	"	"
M8PFOA	143			89.5%		70-130	"	"	"
M9PFNA	142			88.9%		70-130	"	"	"
M8PFOS	135			88.3%		70-130	"	"	"
M6PFDA	140			87.1%		70-130	"	"	"
M7PFUnA	139			87.1%		70-130	"	"	"
MPFDoA	138			86.3%		70-130	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	117			78.0%		70-130	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	123			80.8%		70-130	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	126			82.0%		70-130	"	"	"
D5-N-EtFOSAA	143			89.4%		70-130	"	"	"
D3-N-MeFOSAA	139			86.9%		70-130	"	"	"
M3PFBS	134			90.1%		70-130	"	"	"
M5PFPeA	153			95.6%		70-130	"	"	"
M4PFHpA	143			89.1%		70-130	"	"	"
M2PFTreA	125			77.9%		64.4-130	"	"	"
M8PFOSA	143			89.0%		70-130	"	"	"

DPT-21-GW (2202010-08RE1) Matrix: Water Sampled: Feb-21-22 17:00 Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorotridecanoate	U			10.4	ng/L	1	B22C009	Mar-09-22	Mar-09-22
perfluorododecanoate	U			10.4	"	"	"	"	"
perfluoroundecanoate	U			10.4	"	"	"	"	"
perfluorodecanoate	U			10.4	"	"	"	"	"
perfluorooctyl sulfonate	U			10.4	"	"	"	"	"
perfluorononanoate	U			10.4	"	"	"	"	"
perfluorooctanoate	U			10.4	"	"	"	"	"
perfluorohexyl sulfonate	U			10.4	"	"	"	"	"
perfluoroheptanoate	U			41.8	"	"	"	"	"
perfluorohexanoate	U			10.4	"	"	"	"	"
perfluorobutyl sulfonate	16.0			10.4	"	"	"	"	"



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DPT-21-GW (2202010-08RE1)

Matrix: Water

Sampled: Feb-21-22 17:00

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluoropentanoate	56.9			52.2	ng/L	1	B22C009	Mar-09-22	Mar-09-22
perfluorobutanoate	605			52.2	"	"	"	"	"
perfluorotetradecanoate	U			10.4	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U			10.4	"	"	"	"	"
NMeFOSA	U			10.4	"	"	"	"	"
NEtFOSA	U			10.4	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	U			10.4	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U			10.4	"	"	"	"	"
NMeFOSE	U			10.4	"	"	"	"	"
NEtFOSE	U			10.4	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	U			10.4	"	"	"	"	"
HFPO-DA	U			10.4	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	U			10.4	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U			10.4	"	"	"	"	"
ADONA	U			10.4	"	"	"	"	"
9Cl-PF3ONS	U			10.4	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	U			10.4	"	"	"	"	"
11Cl-PF3OUdS	U			10.4	"	"	"	"	"
N-MeFOSAA	U			10.4	"	"	"	"	"
N-EtFOSAA	U			10.4	"	"	"	"	"
NFDHA	U			10.4	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	U			10.4	"	"	"	"	"
PFEESA	U			10.4	"	"	"	"	"
PFMPA	16.0			10.4	"	"	"	"	"
PFMBA	U			10.4	"	"	"	"	"
3:3 FTCA	U			10.4	"	"	"	"	"
5:3 FTCA	U			10.4	"	"	"	"	"
7:3 FTCA	U			10.4	"	"	"	"	"
FHUEA	U			10.4	"	"	"	"	"
FOUEA	U			10.4	"	"	"	"	"
HQ-115	24.2			10.4	"	"	"	"	"
PFPrA	1950			52.2	"	"	"	"	"
PFDoS	U			10.4	"	"	"	"	"



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Reported:
 Apr-28-22 08:37

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US EPA Region 5 LSASD Analytical Services Branch

DPT-21-GW (2202010-08RE1)

Matrix: Water

Sampled: Feb-21-22 17:00

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
<i>D-N-EtFOSA</i>	162			92.9%		70-130	B22C009	Mar-09-22	Mar-09-22
<i>D-N-MEFOSA</i>	163			93.4%		70-130	"	"	"
<i>D7-N-MeFOSE</i>	173			99.2%		70-130	"	"	"
<i>D9-N-EtFOSE</i>	160			91.8%		70-130	"	"	"
<i>MHFPO-DA</i>	177			101%		70-130	"	"	"
<i>MPFBA</i>	174			99.7%		70-130	"	"	"
<i>M5PFHxA</i>	149			85.6%		70-130	"	"	"
<i>M3PFHxS</i>	142			86.3%		70-130	"	"	"
<i>M8PFOA</i>	149			85.4%		70-130	"	"	"
<i>M9PFNA</i>	149			85.7%		70-130	"	"	"
<i>M8PFOS</i>	144			86.5%		70-130	"	"	"
<i>M6PFDA</i>	148			85.2%		70-130	"	"	"
<i>M7PFUnA</i>	149			85.9%		70-130	"	"	"
<i>MPFDoA</i>	146			83.7%		70-130	"	"	"
<i>perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS</i>	121			74.5%		70-130	"	"	"
<i>perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS</i>	128			77.6%		70-130	"	"	"
<i>perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS</i>	132			79.4%		70-130	"	"	"
<i>D5-N-EtFOSAA</i>	156			89.4%		70-130	"	"	"
<i>D3-N-MeFOSAA</i>	144			82.5%		70-130	"	"	"
<i>M3PFBS</i>	137			84.5%		70-130	"	"	"
<i>M5PFPeA</i>	157			90.0%		70-130	"	"	"
<i>M4PFHpA</i>	149			85.4%		70-130	"	"	"
<i>M2PFTreA</i>	142			81.7%		64.4-130	"	"	"
<i>M8PFOSA</i>	149			85.4%		70-130	"	"	"



Environmental Protection Agency Region 5

US EPA Region 5 LSASD Analytical Services Branch

536 South Clark Street, Chicago, IL 60605
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Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60604

Project: 3M Cordova

Project Number: [none]

Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

Analysis by LC MS MS

US EPA Region 5 LSASD Analytical Services Branch

DPT-22-GW (2202010-09)

Matrix: Water

Sampled: Feb-22-22 12:20

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorotridecanoate	U			9.82	ng/L	1	B22C009	Mar-09-22	Mar-10-22
perfluorododecanoate	U			9.82	"	"	"	"	"
perfluoroundecanoate	U			9.82	"	"	"	"	"
perfluorodecanoate	U			9.82	"	"	"	"	"
perfluorooctyl sulfonate	U			9.82	"	"	"	"	"
perfluorononanoate	U			9.82	"	"	"	"	"
perfluorooctanoate	U			9.82	"	"	"	"	"
perfluorohexyl sulfonate	U			9.82	"	"	"	"	"
perfluoroheptanoate	U			39.3	"	"	"	"	"
perfluorohexanoate	U			9.82	"	"	"	"	"
perfluorobutyl sulfonate	23.5			9.82	"	"	"	"	"
perfluoropentanoate	77.2			49.1	"	"	"	"	"
perfluorobutanoate	1960			49.1	"	"	"	"	"
perfluorotetradecanoate	U			9.82	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U			9.82	"	"	"	"	"
NMeFOSA	U			9.82	"	"	"	"	"
NEtFOSA	U			9.82	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	U			9.82	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U			9.82	"	"	"	"	"
NMeFOSE	U			9.82	"	"	"	"	"
NEtFOSE	U			9.82	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	U			9.82	"	"	"	"	"
HFPO-DA	20.9			9.82	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	U			9.82	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U			9.82	"	"	"	"	"
ADONA	U			9.82	"	"	"	"	"
9Cl-PF3ONS	U			9.82	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	U			9.82	"	"	"	"	"
11Cl-PF3OUdS	U			9.82	"	"	"	"	"
N-MeFOSAA	U			9.82	"	"	"	"	"
N-EtFOSAA	U			9.82	"	"	"	"	"
NFDHA	U			9.82	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	U			9.82	"	"	"	"	"



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Project: 3M Cordova

Project Number: [none]

Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

Analysis by LC MS MS

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DPT-22-GW (2202010-09)

Matrix: Water

Sampled: Feb-22-22 12:20

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
PFEESA	U			9.82	ng/L	1	B22C009	Mar-09-22	Mar-10-22
PFMPA	58.1			9.82	"	"	"	"	"
PFMBA	16.0			9.82	"	"	"	"	"
3:3 FTCA	U			9.82	"	"	"	"	"
5:3 FTCA	U			9.82	"	"	"	"	"
7:3 FTCA	U			9.82	"	"	"	"	"
FHUEA	U			9.82	"	"	"	"	"
FOUEA	U			9.82	"	"	"	"	"
HQ-115	U			9.82	"	"	"	"	"
PFPPrA	3820			245	"	5	"	"	Mar-11-22
PFDoS	U			9.82	"	1	"	"	Mar-10-22
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
D-N-EtFOSA	134			87.1%		70-130	"	"	"
D-N-MEFOSA	145			93.8%		70-130	"	"	"
D7-N-MeFOSE	144			93.2%		70-130	"	"	"
D9-N-EtFOSE	132			85.9%		70-130	"	"	"
MHFPO-DA	151			98.3%		70-130	"	"	"
MPFBA	180			117%		70-130	"	"	"
M5PFHxA	147			95.3%		70-130	"	"	"
M3PFHxS	143			97.9%		70-130	"	"	"
M8PFOA	146			94.8%		70-130	"	"	"
M9PFNA	148			96.1%		70-130	"	"	"
M8PFOS	142			96.4%		70-130	"	"	"
M6PFDA	146			94.8%		70-130	"	"	"
M7PFUnA	143			93.0%		70-130	"	"	"
MPFDaA	141			91.7%		70-130	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	120			83.3%		70-130	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	129			88.0%		70-130	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	128			86.9%		70-130	"	"	"
D5-N-EtFOSAA	154			99.8%		70-130	"	"	"
D3-N-MeFOSAA	146			94.5%		70-130	"	"	"
M3PFBS	138			96.6%		70-130	"	"	"
M5PFPeA	159			103%		70-130	"	"	"
M4PFHpA	146			95.1%		70-130	"	"	"



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Project Manager: Jennifer Wilson

Reported:
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DPT-22-GW (2202010-09) Matrix: Water Sampled: Feb-22-22 12:20 Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
M2PFTreA	119			77.1%		64.4-130	B22C009	Mar-09-22	Mar-10-22
M8PFOSA	148			96.2%		70-130	"	"	"

DPT-22-GW (2202010-09RE1) Matrix: Water Sampled: Feb-22-22 12:20 Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorotridecanoate	U			10.0	ng/L	1	B22C009	Mar-09-22	Mar-10-22
perfluorododecanoate	U			10.0	"	"	"	"	"
perfluoroundecanoate	U			10.0	"	"	"	"	"
perfluorodecanoate	U			10.0	"	"	"	"	"
perfluorooctyl sulfonate	U			13.0	"	"	"	"	"
perfluorononanoate	U			10.0	"	"	"	"	"
perfluorooctanoate	U			10.0	"	"	"	"	"
perfluorohexyl sulfonate	U			10.0	"	"	"	"	"
perfluoroheptanoate	U			40.0	"	"	"	"	"
perfluorohexanoate	U			10.0	"	"	"	"	"
perfluorobutyl sulfonate	23.8			10.0	"	"	"	"	"
perfluoropentanoate	78.5			50.0	"	"	"	"	"
perfluorobutanoate	1920			50.0	"	"	"	"	"
perfluorotetradecanoate	U			10.0	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U			10.0	"	"	"	"	"
NMeFOSA	U			10.0	"	"	"	"	"
NEtFOSA	U			10.0	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	U			10.0	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U			10.0	"	"	"	"	"
NMeFOSE	U			10.0	"	"	"	"	"
NEtFOSE	U			10.0	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	U			10.0	"	"	"	"	"
HFPO-DA	20.2			10.0	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	U			10.0	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U			10.0	"	"	"	"	"



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Project: 3M Cordova
 Project Number: [none]
 Project Manager: Jennifer Wilson

Reported:
 Apr-28-22 08:37

Analysis by LC MS MS
US EPA Region 5 LSASD Analytical Services Branch

DPT-22-GW (2202010-09RE1)

Matrix: Water

Sampled: Feb-22-22 12:20

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
ADONA	U			10.0	ng/L	1	B22C009	Mar-09-22	Mar-10-22
9CI-PF3ONS	U			10.0	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	U			10.0	"	"	"	"	"
11CI-PF3OUdS	U			10.0	"	"	"	"	"
N-MeFOSAA	U			10.0	"	"	"	"	"
N-EtFOSAA	U			10.0	"	"	"	"	"
NFDHA	U			10.0	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	U			10.0	"	"	"	"	"
PFEESA	U			10.0	"	"	"	"	"
PFMPA	54.6			10.0	"	"	"	"	"
PFMBA	15.4			10.0	"	"	"	"	"
3:3 FTCA	U			10.0	"	"	"	"	"
5:3 FTCA	U			10.0	"	"	"	"	"
7:3 FTCA	U			10.0	"	"	"	"	"
FHUEA	U			10.0	"	"	"	"	"
FOUEA	U			10.0	"	"	"	"	"
HQ-115	U			10.0	"	"	"	"	"
PFPPrA	3590			250	"	5	"	"	Mar-11-22
PFDoS	U			10.0	"	1	"	"	Mar-10-22
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
D-N-EtFOSA	141			88.2%		70-130	"	"	"
D-N-MEFOSA	150			93.5%		70-130	"	"	"
D7-N-MeFOSE	138			86.5%		70-130	"	"	"
D9-N-EtFOSE	134			83.5%		70-130	"	"	"
MHFPO-DA	149			93.1%		70-130	"	"	"
MPFBA	184			115%		70-130	"	"	"
M5PFHxA	152			94.8%		70-130	"	"	"
M3PFHxS	144			95.3%		70-130	"	"	"
M8PFOA	152			94.6%		70-130	"	"	"
M9PFNA	150			93.6%		70-130	"	"	"
M8PFOS	144			93.7%		70-130	"	"	"
M6PFDA	149			93.2%		70-130	"	"	"
M7PFUnA	149			93.0%		70-130	"	"	"
MPFDsA	146			90.8%		70-130	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	128			85.4%		70-130	"	"	"



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Project: 3M Cordova
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DPT-22-GW (2202010-09RE1)

Matrix: Water

Sampled: Feb-22-22 12:20

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
<i>perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS</i>	132			86.7%		70-130	B22C009	Mar-09-22	Mar-10-22
<i>perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS</i>	133			86.6%		70-130	"	"	"
<i>D5-N-EtFOSAA</i>	163			101%		70-130	"	"	"
<i>D3-N-MeFOSAA</i>	146			91.5%		70-130	"	"	"
<i>M3PFBS</i>	141			94.4%		70-130	"	"	"
<i>M5PFPeA</i>	162			101%		70-130	"	"	"
<i>M4PFHpA</i>	151			94.4%		70-130	"	"	"
<i>M2PFTreA</i>	131			81.8%		64.4-130	"	"	"
<i>M8PFOSA</i>	149			93.2%		70-130	"	"	"

DPT-23-GW (2202010-10)

Matrix: Water

Sampled: Feb-23-22 13:00

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorotridecanoate	U			10.0	ng/L	1	B22C009	Mar-09-22	Mar-10-22
perfluorododecanoate	U			10.0	"	"	"	"	"
perfluoroundecanoate	U			10.0	"	"	"	"	"
perfluorodecanoate	U			10.0	"	"	"	"	"
perfluorooctyl sulfonate	U			10.0	"	"	"	"	"
perfluorononanoate	U			10.0	"	"	"	"	"
perfluorooctanoate	U			10.0	"	"	"	"	"
perfluorohexyl sulfonate	U			10.0	"	"	"	"	"
perfluoroheptanoate	U			40.1	"	"	"	"	"
perfluorohexanoate	U			10.0	"	"	"	"	"
perfluorobutyl sulfonate	U			10.0	"	"	"	"	"
perfluoropentanoate	U			50.2	"	"	"	"	"
perfluorobutanoate	383			50.2	"	"	"	"	"
perfluorotetradecanoate	U			10.0	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U			10.0	"	"	"	"	"
NMeFOSA	U			10.0	"	"	"	"	"
NEtFOSA	U			10.0	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	U			10.0	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U			10.0	"	"	"	"	"



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Reported:
 Apr-28-22 08:37

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US EPA Region 5 LSASD Analytical Services Branch

DPT-23-GW (2202010-10) Matrix: Water Sampled: Feb-23-22 13:00 Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
NMeFOSE	U			10.0	ng/L	1	B22C009	Mar-09-22	Mar-10-22
NEtFOSE	U			10.0	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	U			10.0	"	"	"	"	"
HFPO-DA	U			10.0	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	U			10.0	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U			10.0	"	"	"	"	"
ADONA	U			10.0	"	"	"	"	"
9Cl-PF3ONS	U			10.0	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	U			10.0	"	"	"	"	"
11Cl-PF3OUdS	U			10.0	"	"	"	"	"
N-MeFOSAA	U			10.0	"	"	"	"	"
N-EtFOSAA	U			10.0	"	"	"	"	"
NFDHA	U			10.0	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	U			10.0	"	"	"	"	"
PFEESA	U			10.0	"	"	"	"	"
PFMPA	U			10.0	"	"	"	"	"
PFMBA	U			10.0	"	"	"	"	"
3:3 FTCA	U			10.0	"	"	"	"	"
5:3 FTCA	U			10.0	"	"	"	"	"
7:3 FTCA	U			10.0	"	"	"	"	"
FHUEA	U			10.0	"	"	"	"	"
FOUEA	U			10.0	"	"	"	"	"
HQ-115	U			10.0	"	"	"	"	"
PFPPrA	800			50.2	"	"	"	"	"
PFDoS	U			10.0	"	"	"	"	"

Surrogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
D-N-EtFOSA	137	85.1%	70-130	"	"	"
D-N-MEFOSA	147	91.0%	70-130	"	"	"
D7-N-MeFOSE	143	88.6%	70-130	"	"	"
D9-N-EtFOSE	139	86.0%	70-130	"	"	"
MHFPO-DA	151	93.8%	70-130	"	"	"
MPFBA	195	121%	70-130	"	"	"
M5PFHxA	160	99.6%	70-130	"	"	"
M3PFHxS	156	102%	70-130	"	"	"



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DPT-23-GW (2202010-10) Matrix: Water Sampled: Feb-23-22 13:00 Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
M8PFOA	161			100%		70-130	B22C009	Mar-09-22	Mar-10-22
M9PFNA	163			101%		70-130	"	"	"
M8PFOS	156			101%		70-130	"	"	"
M6PFDA	163			101%		70-130	"	"	"
M7PFUnA	161			100%		70-130	"	"	"
MPFDoA	160			99.4%		70-130	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	131			87.1%		70-130	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	143			93.9%		70-130	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	148			96.2%		70-130	"	"	"
D5-N-EtFOSAA	175			109%		70-130	"	"	"
D3-N-MeFOSAA	155			96.3%		70-130	"	"	"
M3PFBS	151			101%		70-130	"	"	"
M5PFPeA	171			106%		70-130	"	"	"
M4PFHpA	161			99.9%		70-130	"	"	"
M2PFTreA	146			90.4%		64.4-130	"	"	"
M8PFOSA	163			101%		70-130	"	"	"

DPT-23-GW (2202010-10RE1) Matrix: Water Sampled: Feb-23-22 13:00 Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorotridecanoate	U			10.6	ng/L	1	B22C009	Mar-09-22	Mar-10-22
perfluorododecanoate	U			10.6	"	"	"	"	"
perfluoroundecanoate	U			10.6	"	"	"	"	"
perfluorodecanoate	U			10.6	"	"	"	"	"
perfluorooctyl sulfonate	U			10.6	"	"	"	"	"
perfluorononanoate	U			10.6	"	"	"	"	"
perfluorooctanoate	U			10.6	"	"	"	"	"
perfluorohexyl sulfonate	U			10.6	"	"	"	"	"
perfluoroheptanoate	U			42.4	"	"	"	"	"
perfluorohexanoate	U			10.6	"	"	"	"	"
perfluorobutyl sulfonate	U			10.6	"	"	"	"	"
perfluoropentanoate	U			53.0	"	"	"	"	"
perfluorobutanoate	345			53.0	"	"	"	"	"



Environmental Protection Agency Region 5
US EPA Region 5 LSASD Analytical Services Branch

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60604

Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

Analysis by LC MS MS
US EPA Region 5 LSASD Analytical Services Branch

DPT-23-GW (2202010-10RE1)

Matrix: Water

Sampled: Feb-23-22 13:00

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorotetradecanoate	U			10.6	ng/L	1	B22C009	Mar-09-22	Mar-10-22
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U			10.6	"	"	"	"	"
NMeFOSA	U			10.6	"	"	"	"	"
NEtFOSA	U			10.6	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	U			10.6	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U			10.6	"	"	"	"	"
NMeFOSE	U			10.6	"	"	"	"	"
NEtFOSE	U			10.6	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	U			10.6	"	"	"	"	"
HFPO-DA	U			10.6	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	U			10.6	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U			10.6	"	"	"	"	"
ADONA	U			10.6	"	"	"	"	"
9Cl-PF3ONS	U			10.6	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	U			10.6	"	"	"	"	"
11Cl-PF3OUdS	U			10.6	"	"	"	"	"
N-MeFOSAA	U			10.6	"	"	"	"	"
N-EtFOSAA	U			10.6	"	"	"	"	"
NFDHA	U			10.6	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	U			10.6	"	"	"	"	"
PFEESA	U			10.6	"	"	"	"	"
PFMPA	U			10.6	"	"	"	"	"
PFMBA	U			10.6	"	"	"	"	"
3:3 FTCA	U			10.6	"	"	"	"	"
5:3 FTCA	U			10.6	"	"	"	"	"
7:3 FTCA	U			10.6	"	"	"	"	"
FHUEA	U			10.6	"	"	"	"	"
FOUEA	U			10.6	"	"	"	"	"
HQ-115	U			10.6	"	"	"	"	"
PFPrA	711			53.0	"	"	"	"	"
PFDoS	U			10.6	"	"	"	"	"

Surrogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
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Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

Analysis by LC MS MS

US EPA Region 5 LSASD Analytical Services Branch

DPT-23-GW (2202010-10RE1)

Matrix: Water

Sampled: Feb-23-22 13:00

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
D-N-EtFOSA	141			78.7%		70-130	B22C009	Mar-09-22	Mar-10-22
D-N-MEFOSA	142			79.4%		70-130	"	"	"
D7-N-MeFOSE	136			75.8%		70-130	"	"	"
D9-N-EtFOSE	142			79.3%		70-130	"	"	"
MHFPO-DA	137			76.7%		70-130	"	"	"
MPFBA	198			111%		70-130	"	"	"
M5PFHxA	181			101%		70-130	"	"	"
M3PFHxS	175			103%		70-130	"	"	"
M8PFOA	182			102%		70-130	"	"	"
M9PFNA	183			102%		70-130	"	"	"
M8PFOS	173			101%		70-130	"	"	"
M6PFDA	179			100%		70-130	"	"	"
M7PFUnA	181			101%		70-130	"	"	"
MPFDoA	180			101%		70-130	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	146			87.3%		70-130	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	157			92.6%		70-130	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	163			94.8%		70-130	"	"	"
D5-N-EtFOSAA	182			102%		70-130	"	"	"
D3-N-MeFOSAA	174			97.1%		70-130	"	"	"
M3PFBS	161			96.9%		70-130	"	"	"
M5PFPeA	188			105%		70-130	"	"	"
M4PFHpA	181			101%		70-130	"	"	"
M2PFTreA	186			104%		64.4-130	"	"	"
M8PFOSA	180			101%		70-130	"	"	"



Environmental Protection Agency Region 5

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Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

Analysis by LC MS MS

US EPA Region 5 LSASD Analytical Services Branch

DPT-24-GW (2202010-11)

Matrix: Water

Sampled: Feb-23-22 10:25

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorotridecanoate	U			9.66	ng/L	1	B22C009	Mar-09-22	Mar-10-22
perfluorododecanoate	U			9.66	"	"	"	"	"
perfluoroundecanoate	U			9.66	"	"	"	"	"
perfluorodecanoate	U			9.66	"	"	"	"	"
perfluorooctyl sulfonate	U			9.66	"	"	"	"	"
perfluorononanoate	U			9.66	"	"	"	"	"
perfluorooctanoate	U			9.66	"	"	"	"	"
perfluorohexyl sulfonate	U			9.66	"	"	"	"	"
perfluoroheptanoate	U			38.7	"	"	"	"	"
perfluorohexanoate	U			9.66	"	"	"	"	"
perfluorobutyl sulfonate	34.9			9.66	"	"	"	"	"
perfluoropentanoate	60.9			48.3	"	"	"	"	"
perfluorobutanoate	1160			48.3	"	"	"	"	"
perfluorotetradecanoate	U			9.66	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U			9.66	"	"	"	"	"
NMeFOSA	U			9.66	"	"	"	"	"
NEtFOSA	U			9.66	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	U			9.66	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U			9.66	"	"	"	"	"
NMeFOSE	U			9.66	"	"	"	"	"
NEtFOSE	U			9.66	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	U			9.66	"	"	"	"	"
HFPO-DA	18.6			9.66	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	U			9.66	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U			9.66	"	"	"	"	"
ADONA	U			9.66	"	"	"	"	"
9Cl-PF3ONS	U			9.66	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	U			9.66	"	"	"	"	"
11Cl-PF3OUdS	U			9.66	"	"	"	"	"
N-MeFOSAA	U			9.66	"	"	"	"	"
N-EtFOSAA	U			9.66	"	"	"	"	"
NFDHA	U			9.66	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	U			9.66	"	"	"	"	"



Environmental Protection Agency Region 5

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Chicago IL, 60604

Project: 3M Cordova

Project Number: [none]

Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

Analysis by LC MS MS

US EPA Region 5 LSASD Analytical Services Branch

DPT-24-GW (2202010-11)

Matrix: Water

Sampled: Feb-23-22 10:25

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
PFEESA	U			9.66	ng/L	1	B22C009	Mar-09-22	Mar-10-22
PFMPA	67.3			9.66	"	"	"	"	"
PFMBA	15.3			9.66	"	"	"	"	"
3:3 FTCA	U			9.66	"	"	"	"	"
5:3 FTCA	U			9.66	"	"	"	"	"
7:3 FTCA	U			9.66	"	"	"	"	"
FHUEA	U			9.66	"	"	"	"	"
FOUEA	U			9.66	"	"	"	"	"
HQ-115	U			9.66	"	"	"	"	"
PFPrA	4300			242	"	5	"	"	Mar-11-22
PFDoS	U			9.66	"	1	"	"	Mar-10-22
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
D-N-EtFOSA	132			88.2%		70-130	"	"	"
D-N-MEFOSA	142			95.2%		70-130	"	"	"
D7-N-MeFOSE	136			91.0%		70-130	"	"	"
D9-N-EtFOSE	135			90.8%		70-130	"	"	"
MHFPO-DA	153			102%		70-130	"	"	"
MPFBA	181			121%		70-130	"	"	"
M5PFHxA	148			98.9%		70-130	"	"	"
M3PFHxS	140			99.4%		70-130	"	"	"
M8PFOA	145			96.9%		70-130	"	"	"
M9PFNA	146			97.8%		70-130	"	"	"
M8PFOS	138			96.7%		70-130	"	"	"
M6PFDA	142			95.1%		70-130	"	"	"
M7PFUnA	141			94.7%		70-130	"	"	"
MPFDaA	139			93.2%		70-130	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	110			78.9%		70-130	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	117			82.6%		70-130	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	123			86.2%		70-130	"	"	"
D5-N-EtFOSAA	152			102%		70-130	"	"	"
D3-N-MeFOSAA	134			89.9%		70-130	"	"	"
M3PFBS	136			98.1%		70-130	"	"	"
M5PFPeA	157			105%		70-130	"	"	"
M4PFHpA	147			98.7%		70-130	"	"	"



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Project: 3M Cordova
 Project Number: [none]
 Project Manager: Jennifer Wilson

Reported:
 Apr-28-22 08:37

Analysis by LC MS MS
US EPA Region 5 LSASD Analytical Services Branch

DPT-24-GW (2202010-11) Matrix: Water Sampled: Feb-23-22 10:25 Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
M2PFTreA	120			80.1%		64.4-130	B22C009	Mar-09-22	Mar-10-22
M8PFOSA	145			96.9%		70-130	"	"	"

DPT-24-GW (2202010-11RE1) Matrix: Water Sampled: Feb-23-22 10:25 Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorotridecanoate	U			9.63	ng/L	1	B22C009	Mar-09-22	Mar-10-22
perfluorododecanoate	U			9.63	"	"	"	"	"
perfluoroundecanoate	U			9.63	"	"	"	"	"
perfluorodecanoate	U			9.63	"	"	"	"	"
perfluorooctyl sulfonate	U			9.63	"	"	"	"	"
perfluorononanoate	U			9.63	"	"	"	"	"
perfluorooctanoate	U			9.63	"	"	"	"	"
perfluorohexyl sulfonate	U			9.63	"	"	"	"	"
perfluoroheptanoate	U			38.5	"	"	"	"	"
perfluorohexanoate	U			9.63	"	"	"	"	"
perfluorobutyl sulfonate	34.5			9.63	"	"	"	"	"
perfluoropentanoate	60.6			48.2	"	"	"	"	"
perfluorobutanoate	1220			48.2	"	"	"	"	"
perfluorotetradecanoate	U			9.63	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U			9.63	"	"	"	"	"
NMeFOSA	U			9.63	"	"	"	"	"
NEtFOSA	U			9.63	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	U			9.63	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U			9.63	"	"	"	"	"
NMeFOSE	U			9.63	"	"	"	"	"
NEtFOSE	U			9.63	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	U			9.63	"	"	"	"	"
HFPO-DA	19.4			9.63	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	U			9.63	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U			9.63	"	"	"	"	"



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Project: 3M Cordova
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 Project Manager: Jennifer Wilson

Reported:
 Apr-28-22 08:37

Analysis by LC MS MS
US EPA Region 5 LSASD Analytical Services Branch

DPT-24-GW (2202010-11RE1)

Matrix: Water

Sampled: Feb-23-22 10:25

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
ADONA	U			9.63	ng/L	1	B22C009	Mar-09-22	Mar-10-22
9CI-PF3ONS	U			9.63	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	U			9.63	"	"	"	"	"
11CI-PF3OUdS	U			9.63	"	"	"	"	"
N-MeFOSAA	U			9.63	"	"	"	"	"
N-EtFOSAA	U			9.63	"	"	"	"	"
NFDHA	U			9.63	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	U			9.63	"	"	"	"	"
PFEESA	U			9.63	"	"	"	"	"
PFMPA	68.3			9.63	"	"	"	"	"
PFMBA	15.6			9.63	"	"	"	"	"
3:3 FTCA	U			9.63	"	"	"	"	"
5:3 FTCA	U			9.63	"	"	"	"	"
7:3 FTCA	U			9.63	"	"	"	"	"
FHUEA	U			9.63	"	"	"	"	"
FOUEA	U			9.63	"	"	"	"	"
HQ-115	U			9.63	"	"	"	"	"
PFPPrA	4140			241	"	5	"	"	Mar-11-22
PFDoS	U			9.63	"	1	"	"	Mar-10-22

Surrogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
D-N-EtFOSA	123	83.1%	70-130	"	"	"
D-N-MEFOSA	134	90.7%	70-130	"	"	"
D7-N-MeFOSE	136	91.5%	70-130	"	"	"
D9-N-EtFOSE	134	90.4%	70-130	"	"	"
MHFPO-DA	150	101%	70-130	"	"	"
MPFBA	191	129%	70-130	"	"	"
M5PFHxA	151	102%	70-130	"	"	"
M3PFHxS	144	103%	70-130	"	"	"
M8PFOA	150	101%	70-130	"	"	"
M9PFNA	150	101%	70-130	"	"	"
M8PFOS	144	102%	70-130	"	"	"
M6PFDA	151	102%	70-130	"	"	"
M7PFUnA	152	102%	70-130	"	"	"
MPFDaA	144	97.2%	70-130	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	113	81.2%	70-130	"	"	"



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Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

Analysis by LC MS MS

US EPA Region 5 LSASD Analytical Services Branch

DPT-24-GW (2202010-11RE1)

Matrix: Water

Sampled: Feb-23-22 10:25

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
<i>perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS</i>	122			86.4%		70-130	B22C009	Mar-09-22	Mar-10-22
<i>perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS</i>	130			91.2%		70-130	"	"	"
<i>D5-N-EtFOSAA</i>	150			101%		70-130	"	"	"
<i>D3-N-MeFOSAA</i>	142			95.8%		70-130	"	"	"
<i>M3PFBS</i>	145			105%		70-130	"	"	"
<i>M5PFPeA</i>	163			110%		70-130	"	"	"
<i>M4PFHpA</i>	152			102%		70-130	"	"	"
<i>M2PFTreA</i>	124			83.7%		64.4-130	"	"	"
<i>M8PFOSA</i>	152			102%		70-130	"	"	"

Field Blank - GW (2202010-18)

Matrix: Water

Sampled: Feb-22-22 10:28

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorotridecanoate	U			10.4	ng/L	1	B22C009	Mar-09-22	Mar-10-22
perfluorododecanoate	U			10.4	"	"	"	"	"
perfluoroundecanoate	U			10.4	"	"	"	"	"
perfluorodecanoate	U			10.4	"	"	"	"	"
perfluorooctyl sulfonate	U			10.4	"	"	"	"	"
perfluorononanoate	U			10.4	"	"	"	"	"
perfluorooctanoate	U			10.4	"	"	"	"	"
perfluorohexyl sulfonate	U			10.4	"	"	"	"	"
perfluoroheptanoate	U			41.4	"	"	"	"	"
perfluorohexanoate	U			10.4	"	"	"	"	"
perfluorobutyl sulfonate	U			10.4	"	"	"	"	"
perfluoropentanoate	U			51.8	"	"	"	"	"
perfluorobutanoate	U			51.8	"	"	"	"	"
perfluorotetradecanoate	U			10.4	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U			10.4	"	"	"	"	"
NMeFOSA	U			10.4	"	"	"	"	"
NEtFOSA	U			10.4	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	U			10.4	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U			10.4	"	"	"	"	"



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Project: 3M Cordova
 Project Number: [none]
 Project Manager: Jennifer Wilson

Reported:
 Apr-28-22 08:37

Analysis by LC MS MS
US EPA Region 5 LSASD Analytical Services Branch

Field Blank - GW (2202010-18)

Matrix: Water

Sampled: Feb-22-22 10:28

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
NMeFOSE	U			10.4	ng/L	1	B22C009	Mar-09-22	Mar-10-22
NEtFOSE	U			10.4	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	U			10.4	"	"	"	"	"
HFPO-DA	U			10.4	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	U			10.4	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U			10.4	"	"	"	"	"
ADONA	U			10.4	"	"	"	"	"
9Cl-PF3ONS	U			10.4	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	U			10.4	"	"	"	"	"
11Cl-PF3OUdS	U			10.4	"	"	"	"	"
N-MeFOSAA	U			10.4	"	"	"	"	"
N-EtFOSAA	U			10.4	"	"	"	"	"
NFDHA	U			10.4	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	U			10.4	"	"	"	"	"
PFEESA	U			10.4	"	"	"	"	"
PFMPA	U			10.4	"	"	"	"	"
PFMBA	U			10.4	"	"	"	"	"
3:3 FTCA	U			10.4	"	"	"	"	"
5:3 FTCA	U			10.4	"	"	"	"	"
7:3 FTCA	U			10.4	"	"	"	"	"
FHUEA	U			10.4	"	"	"	"	"
FOUEA	U			10.4	"	"	"	"	"
HQ-115	U			10.4	"	"	"	"	"
PFPPrA	U			51.8	"	"	"	"	"
PFDoS	U			10.4	"	"	"	"	"
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
D-N-EtFOSA	161			93.8%		70-130	"	"	"
D-N-MEFOSA	161			93.7%		70-130	"	"	"
D7-N-MeFOSE	165			96.4%		70-130	"	"	"
D9-N-EtFOSE	160			93.5%		70-130	"	"	"
MHFPO-DA	176			103%		70-130	"	"	"
MPFBA	209			122%		70-130	"	"	"
M5PFHxA	173			101%		70-130	"	"	"
M3PFHxS	166			102%		70-130	"	"	"



Environmental Protection Agency Region 5

US EPA Region 5 LSASD Analytical Services Branch

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60604

Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

Analysis by LC MS MS

US EPA Region 5 LSASD Analytical Services Branch

Field Blank - GW (2202010-18)

Matrix: Water

Sampled: Feb-22-22 10:28

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
M8PFOA	175			102%		70-130	B22C009	Mar-09-22	Mar-10-22
M9PFNA	173			101%		70-130	"	"	"
M8PFOS	162			98.5%		70-130	"	"	"
M6PFDA	175			102%		70-130	"	"	"
M7PFUnA	172			100%		70-130	"	"	"
MPFDoA	176			103%		70-130	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	153			95.3%		70-130	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	156			95.8%		70-130	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	159			97.1%		70-130	"	"	"
D5-N-EtFOSAA	199			116%		70-130	"	"	"
D3-N-MeFOSAA	176			103%		70-130	"	"	"
M3PFBS	162			102%		70-130	"	"	"
M5PFPeA	182			106%		70-130	"	"	"
M4PFHpA	174			101%		70-130	"	"	"
M2PFTreA	190			111%		64.4-130	"	"	"
M8PFOSA	177			103%		70-130	"	"	"

Field Blank - GW (2202010-18RE1)

Matrix: Water

Sampled: Feb-22-22 10:28

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorotridecanoate	U			10.0	ng/L	1	B22C009	Mar-09-22	Mar-10-22
perfluorododecanoate	U			10.0	"	"	"	"	"
perfluoroundecanoate	U			10.0	"	"	"	"	"
perfluorodecanoate	U			10.0	"	"	"	"	"
perfluorooctyl sulfonate	U			10.0	"	"	"	"	"
perfluorononanoate	U			10.0	"	"	"	"	"
perfluorooctanoate	U			10.0	"	"	"	"	"
perfluorohexyl sulfonate	U			10.0	"	"	"	"	"
perfluoroheptanoate	U			40.1	"	"	"	"	"
perfluorohexanoate	U			10.0	"	"	"	"	"
perfluorobutyl sulfonate	U			10.0	"	"	"	"	"
perfluoropentanoate	U			50.1	"	"	"	"	"
perfluorobutanoate	U			50.1	"	"	"	"	"



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Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

Analysis by LC MS MS
US EPA Region 5 LSASD Analytical Services Branch

Field Blank - GW (2202010-18RE1)

Matrix: Water

Sampled: Feb-22-22 10:28

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorotetradecanoate	U			10.0	ng/L	1	B22C009	Mar-09-22	Mar-10-22
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U			10.0	"	"	"	"	"
NMeFOSA	U			10.0	"	"	"	"	"
NEtFOSA	U			10.0	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	U			10.0	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U			10.0	"	"	"	"	"
NMeFOSE	U			10.0	"	"	"	"	"
NEtFOSE	U			10.0	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	U			10.0	"	"	"	"	"
HFPO-DA	U			10.0	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	U			10.0	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U			10.0	"	"	"	"	"
ADONA	U			10.0	"	"	"	"	"
9Cl-PF3ONS	U			10.0	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	U			10.0	"	"	"	"	"
11Cl-PF3OUdS	U			10.0	"	"	"	"	"
N-MeFOSAA	U			10.0	"	"	"	"	"
N-EtFOSAA	U			10.0	"	"	"	"	"
NFDHA	U			10.0	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	U			10.0	"	"	"	"	"
PFEESA	U			10.0	"	"	"	"	"
PFMPA	U			10.0	"	"	"	"	"
PFMBA	U			10.0	"	"	"	"	"
3:3 FTCA	U			10.0	"	"	"	"	"
5:3 FTCA	U			10.0	"	"	"	"	"
7:3 FTCA	U			10.0	"	"	"	"	"
FHUEA	U			10.0	"	"	"	"	"
FOUEA	U			10.0	"	"	"	"	"
HQ-115	U			10.0	"	"	"	"	"
PFPrA	U			50.1	"	"	"	"	"
PFDoS	U			10.0	"	"	"	"	"

Surrogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
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Environmental Protection Agency Region 5
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Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

Analysis by LC MS MS
US EPA Region 5 LSASD Analytical Services Branch

Field Blank - GW (2202010-18RE1)

Matrix: Water

Sampled: Feb-22-22 10:28

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
D-N-EtFOSA	144			89.5%		70-130	B22C009	Mar-09-22	Mar-10-22
D-N-MEFOSA	144			89.3%		70-130	"	"	"
D7-N-MeFOSE	138			85.4%		70-130	"	"	"
D9-N-EtFOSE	134			83.0%		70-130	"	"	"
MHFPO-DA	151			93.6%		70-130	"	"	"
MPFBA	193			120%		70-130	"	"	"
M5PFHxA	161			100%		70-130	"	"	"
M3PFHxS	153			101%		70-130	"	"	"
M8PFOA	161			100%		70-130	"	"	"
M9PFNA	162			101%		70-130	"	"	"
M8PFOS	151			98.3%		70-130	"	"	"
M6PFDA	162			100%		70-130	"	"	"
M7PFUnA	162			101%		70-130	"	"	"
MPFDoA	161			99.8%		70-130	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	139			92.5%		70-130	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	150			98.2%		70-130	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	147			95.6%		70-130	"	"	"
D5-N-EtFOSAA	168			104%		70-130	"	"	"
D3-N-MeFOSAA	164			102%		70-130	"	"	"
M3PFBS	149			99.5%		70-130	"	"	"
M5PFPeA	169			105%		70-130	"	"	"
M4PFHpA	160			99.7%		70-130	"	"	"
M2PFTreA	160			99.4%		64.4-130	"	"	"
M8PFOSA	163			101%		70-130	"	"	"



Environmental Protection Agency Region 5
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Chicago IL, 60604

Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

Analysis by LC MS MS
US EPA Region 5 LSASD Analytical Services Branch

Equipment Blank - GW (2202010-19)

Matrix: Water

Sampled: Feb-23-22 12:05

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorotridecanoate	U			9.91	ng/L	1	B22C009	Mar-09-22	Mar-10-22
perfluorododecanoate	U			9.91	"	"	"	"	"
perfluoroundecanoate	U			9.91	"	"	"	"	"
perfluorodecanoate	U			9.91	"	"	"	"	"
perfluorooctyl sulfonate	U			9.91	"	"	"	"	"
perfluorononanoate	U			9.91	"	"	"	"	"
perfluorooctanoate	U			9.91	"	"	"	"	"
perfluorohexyl sulfonate	U			9.91	"	"	"	"	"
perfluoroheptanoate	U			39.6	"	"	"	"	"
perfluorohexanoate	U			9.91	"	"	"	"	"
perfluorobutyl sulfonate	U			9.91	"	"	"	"	"
perfluoropentanoate	U			49.6	"	"	"	"	"
perfluorobutanoate	U			49.6	"	"	"	"	"
perfluorotetradecanoate	U			9.91	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U			9.91	"	"	"	"	"
NMeFOSA	U			9.91	"	"	"	"	"
NEtFOSA	U			9.91	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	U			9.91	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U			9.91	"	"	"	"	"
NMeFOSE	U			9.91	"	"	"	"	"
NEtFOSE	U			9.91	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	U			9.91	"	"	"	"	"
HFPO-DA	U			9.91	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	U			9.91	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U			9.91	"	"	"	"	"
ADONA	U			9.91	"	"	"	"	"
9CI-PF3ONS	U			9.91	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	U			9.91	"	"	"	"	"
11CI-PF3OUdS	U			9.91	"	"	"	"	"
N-MeFOSAA	U			9.91	"	"	"	"	"
N-EtFOSAA	U			9.91	"	"	"	"	"
NFDHA	U			9.91	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	U			9.91	"	"	"	"	"



Environmental Protection Agency Region 5
US EPA Region 5 LSASD Analytical Services Branch

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 77 West Jackson Boulevard
 Chicago IL, 60604

Project: 3M Cordova
 Project Number: [none]
 Project Manager: Jennifer Wilson

Reported:
 Apr-28-22 08:37

Analysis by LC MS MS
US EPA Region 5 LSASD Analytical Services Branch

Equipment Blank - GW (2202010-19)

Matrix: Water

Sampled: Feb-23-22 12:05

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
PFEESA	U			9.91	ng/L	1	B22C009	Mar-09-22	Mar-10-22
PFMPA	U			9.91	"	"	"	"	"
PFMBA	U			9.91	"	"	"	"	"
3:3 FTCA	U			9.91	"	"	"	"	"
5:3 FTCA	U			9.91	"	"	"	"	"
7:3 FTCA	U			9.91	"	"	"	"	"
FHUEA	U			9.91	"	"	"	"	"
FOUEA	U			9.91	"	"	"	"	"
HQ-115	U			9.91	"	"	"	"	"
PFPrA	U			49.6	"	"	"	"	"
PFDoS	U			9.91	"	"	"	"	"
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
D-N-EtFOSA	131			83.2%		70-130	"	"	"
D-N-MEFOSA	136			86.7%		70-130	"	"	"
D7-N-MeFOSE	130			83.0%		70-130	"	"	"
D9-N-EtFOSE	131			83.2%		70-130	"	"	"
MHFPO-DA	144			91.8%		70-130	"	"	"
MPFBA	175			112%		70-130	"	"	"
M5PFHxA	144			91.9%		70-130	"	"	"
M3PFHxS	139			93.3%		70-130	"	"	"
M8PFOA	143			91.3%		70-130	"	"	"
M9PFNA	148			94.1%		70-130	"	"	"
M8PFOS	137			90.8%		70-130	"	"	"
M6PFDA	146			92.8%		70-130	"	"	"
M7PFUnA	146			93.1%		70-130	"	"	"
MPFDoA	148			94.1%		70-130	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	130			88.3%		70-130	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	135			90.5%		70-130	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	135			89.5%		70-130	"	"	"
D5-N-EtFOSAA	159			101%		70-130	"	"	"
D3-N-MeFOSAA	145			92.0%		70-130	"	"	"
M3PFBS	133			91.1%		70-130	"	"	"
M5PFPeA	152			96.9%		70-130	"	"	"
M4PFHpA	142			90.5%		70-130	"	"	"



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Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

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US EPA Region 5 LSASD Analytical Services Branch

Equipment Blank - GW (2202010-19)

Matrix: Water

Sampled: Feb-23-22 12:05

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
M2PFTreA	150			95.6%		64.4-130	B22C009	Mar-09-22	Mar-10-22
M8PFOSA	146			92.6%		70-130	"	"	"

Equipment Blank - GW (2202010-19RE1)

Matrix: Water

Sampled: Feb-23-22 12:05

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorotridecanoate	U			10.2	ng/L	1	B22C009	Mar-09-22	Mar-10-22
perfluorododecanoate	U			10.2	"	"	"	"	"
perfluoroundecanoate	U			10.2	"	"	"	"	"
perfluorodecanoate	U			10.2	"	"	"	"	"
perfluorooctyl sulfonate	U			10.2	"	"	"	"	"
perfluorononanoate	U			10.2	"	"	"	"	"
perfluorooctanoate	U			10.2	"	"	"	"	"
perfluorohexyl sulfonate	U			10.2	"	"	"	"	"
perfluoroheptanoate	U			40.9	"	"	"	"	"
perfluorohexanoate	U			10.2	"	"	"	"	"
perfluorobutyl sulfonate	U			10.2	"	"	"	"	"
perfluoropentanoate	U			51.1	"	"	"	"	"
perfluorobutanoate	U			51.1	"	"	"	"	"
perfluorotetradecanoate	U			10.2	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U			10.2	"	"	"	"	"
NMeFOSA	U			10.2	"	"	"	"	"
NEtFOSA	U			10.2	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	U			10.2	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U			10.2	"	"	"	"	"
NMeFOSE	U			10.2	"	"	"	"	"
NEtFOSE	U			10.2	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	U			10.2	"	"	"	"	"
HFPO-DA	U			10.2	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	U			10.2	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U			10.2	"	"	"	"	"



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Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

Analysis by LC MS MS
US EPA Region 5 LSASD Analytical Services Branch

Equipment Blank - GW (2202010-19RE1)

Matrix: Water

Sampled: Feb-23-22 12:05

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
ADONA	U			10.2	ng/L	1	B22C009	Mar-09-22	Mar-10-22
9CI-PF3ONS	U			10.2	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	U			10.2	"	"	"	"	"
11CI-PF3OUdS	U			10.2	"	"	"	"	"
N-MeFOSAA	U			10.2	"	"	"	"	"
N-EtFOSAA	U			10.2	"	"	"	"	"
NFDHA	U			10.2	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	U			10.2	"	"	"	"	"
PFEESA	U			10.2	"	"	"	"	"
PFMPA	U			10.2	"	"	"	"	"
PFMBA	U			10.2	"	"	"	"	"
3:3 FTCA	U			10.2	"	"	"	"	"
5:3 FTCA	U			10.2	"	"	"	"	"
7:3 FTCA	U			10.2	"	"	"	"	"
FHUEA	U			10.2	"	"	"	"	"
FOUEA	U			10.2	"	"	"	"	"
HQ-115	U			10.2	"	"	"	"	"
PFPPrA	U			51.1	"	"	"	"	"
PFDoS	U			10.2	"	"	"	"	"

Surrogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
D-N-EtFOSA	144	86.1%	70-130	"	"	"
D-N-MEFOSA	143	85.4%	70-130	"	"	"
D7-N-MeFOSE	136	81.3%	70-130	"	"	"
D9-N-EtFOSE	138	82.9%	70-130	"	"	"
MHFPO-DA	152	91.2%	70-130	"	"	"
MPFBA	188	112%	70-130	"	"	"
M5PFHxA	159	95.5%	70-130	"	"	"
M3PFHxS	152	96.1%	70-130	"	"	"
M8PFOA	160	95.7%	70-130	"	"	"
M9PFNA	160	95.9%	70-130	"	"	"
M8PFOS	151	94.8%	70-130	"	"	"
M6PFDA	161	96.4%	70-130	"	"	"
M7PFUnA	162	96.9%	70-130	"	"	"
MPFDoA	163	97.8%	70-130	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	140	90.0%	70-130	"	"	"



Environmental Protection Agency Region 5

US EPA Region 5 LSASD Analytical Services Branch

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Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60604

Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

Analysis by LC MS MS

US EPA Region 5 LSASD Analytical Services Branch

Equipment Blank - GW (2202010-19RE1)

Matrix: Water

Sampled: Feb-23-22 12:05

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
<i>perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS</i>	143			90.1%		70-130	B22C009	Mar-09-22	Mar-10-22
<i>perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS</i>	148			92.5%		70-130	"	"	"
<i>D5-N-EtFOSAA</i>	173			104%		70-130	"	"	"
<i>D3-N-MeFOSAA</i>	162			96.9%		70-130	"	"	"
<i>M3PFBS</i>	149			96.2%		70-130	"	"	"
<i>M5PFPeA</i>	168			101%		70-130	"	"	"
<i>M4PFHpA</i>	159			95.0%		70-130	"	"	"
<i>M2PFTreA</i>	171			102%		64.4-130	"	"	"
<i>M8PFOSA</i>	163			97.6%		70-130	"	"	"



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Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

PFC

US EPA Region 5 LSASD Analytical Services Branch

DPT-28-O-3 (2202010-01)

Matrix: Soil

Sampled: Feb-21-22 14:15

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorotetradecanoate	U	Research		39.9	ng/kg dry	1	B22C010	Mar-09-22	Mar-10-22
perfluorotridecanoate	U	Research		39.9	"	"	"	"	"
perfluorododecanoate	U	Research		39.9	"	"	"	"	"
perfluoroundecanoate	79.4	Research		39.9	"	"	"	"	"
perfluorodecanoate	75.3	Research		39.9	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	U	Research		39.9	"	"	"	"	"
perfluorooctyl sulfonate	863	Research		39.9	"	"	"	"	"
perfluorononanoate	127	Research		39.9	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	U	Research		39.9	"	"	"	"	"
perfluorooctanoate	124	Research		39.9	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	U	Research		39.9	"	"	"	"	"
perfluorohexyl sulfonate	U	Research		39.9	"	"	"	"	"
perfluoroheptanoate	56.2	J, Research		39.9	"	"	"	"	"
perfluorohexanoate	52.0	Research		39.9	"	"	"	"	"
perfluorobutyl sulfonate	56.4	Research		39.9	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	U	Research		39.9	"	"	"	"	"
perfluoropentanoate	220	Research		200	"	"	"	"	"
perfluorobutanoate	2810	Research		200	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	U	Research		39.9	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U	Research		39.9	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U	Research		39.9	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U	Research		39.9	"	"	"	"	"
N-EtFOSAA	U	Research		39.9	"	"	"	"	"
N-MeFOSAA	U	Research		39.9	"	"	"	"	"
5:3 FTCA	U	Research		39.9	"	"	"	"	"
PFDoS	U	Research		39.9	"	"	"	"	"
NMeFOSA	U	Research		39.9	"	"	"	"	"
NEtFOSA	U	Research		39.9	"	"	"	"	"
NMeFOSE	U	J, Research		39.9	"	"	"	"	"
NEtFOSE	U	J, Research		39.9	"	"	"	"	"
HFPO-DA	49.2	Research		39.9	"	"	"	"	"
ADONA	U	Research		39.9	"	"	"	"	"
9CI-PF3ONS	U	Research		39.9	"	"	"	"	"



Environmental Protection Agency Region 5

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Project: 3M Cordova

Project Number: [none]

Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

PFC

US EPA Region 5 LSASD Analytical Services Branch

DPT-28-O-3 (2202010-01)

Matrix: Soil

Sampled: Feb-21-22 14:15

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
11Cl-PF3OUdS	U	Research		39.9	ng/kg dry	1	B22C010	Mar-09-22	Mar-10-22
PFPPrA	6040	Research		3990	"	20	"	"	Mar-11-22
NFDHA	U	Research		39.9	"	1	"	"	Mar-10-22
PFEESA	U	Research		55.9	"	"	"	"	"
PFMPA	1410	Research		799	"	20	"	"	Mar-11-22
PFMBA	224	Research		39.9	"	1	"	"	Mar-10-22
3:3 FTCA	U	Research		39.9	"	"	"	"	"
7:3 FTCA	U	Research		39.9	"	"	"	"	"
FHUEA	U	Research		39.9	"	"	"	"	"
FOUEA	U	Research		39.9	"	"	"	"	"
HQ-115	U	Research		39.9	"	"	"	"	"
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
D-N-EtFOSA	522	Research		81.7%		70-130	"	"	"
D-N-MeFOSA	518	Research		81.1%		70-130	"	"	"
D7-N-MeFOSE	293	Research, Q		45.8%		70-130	"	"	"
D9-N-EtFOSE	232	Research, Q		36.3%		70-130	"	"	"
MHFPO-DA	486	Research		76.1%		70-130	"	"	"
MPFBA	763	Research		119%		70-130	"	"	"
M5PFHxA	570	Research		89.1%		70-130	"	"	"
M3PFHxS	556	Research		91.9%		70-130	"	"	"
M8PFOA	583	Research		91.2%		70-130	"	"	"
M9PFNA	582	Research		91.1%		70-130	"	"	"
M8PFOS	544	Research		88.9%		70-130	"	"	"
M6PFDA	586	Research		91.6%		70-130	"	"	"
M7PFUnA	579	Research		90.6%		70-130	"	"	"
MPFDaA	573	Research		89.7%		70-130	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	552	Research		92.3%		70-130	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	573	Research		94.5%		70-130	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	603	Research		98.5%		70-130	"	"	"
D5-N-EtFOSAA	699	Research		109%		70-130	"	"	"
D3-N-MeFOSAA	561	Research		87.8%		70-130	"	"	"
M3PFBS	545	Research		91.8%		70-130	"	"	"
M5PFPeA	602	Research		94.2%		70-130	"	"	"
M4PFHpA	575	Research		90.0%		70-130	"	"	"



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Project Number: [none]

Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

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US EPA Region 5 LSASD Analytical Services Branch

DPT-28-O-3 (2202010-01)

Matrix: Soil

Sampled: Feb-21-22 14:15

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
M2PFTreA	465	Research		72.8%		70-130	B22C010	Mar-09-22	Mar-10-22
M8PFOSA	604	Research		94.5%		70-130	"	"	"

DPT-28-O-3 (2202010-01RE1)

Matrix: Soil

Sampled: Feb-21-22 14:15

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorotetradecanoate	U	J, Research		39.2	ng/kg dry	1	B22C010	Mar-09-22	Mar-10-22
perfluorotridecanoate	U	Research		39.2	"	"	"	"	"
perfluorododecanoate	U	Research		39.2	"	"	"	"	"
perfluoroundecanoate	68.6	Research		39.2	"	"	"	"	"
perfluorodecanoate	72.0	Research		39.2	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	U	Research		39.2	"	"	"	"	"
perfluorooctyl sulfonate	782	Research		39.2	"	"	"	"	"
perfluorononanoate	115	Research		39.2	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	U	Research		39.2	"	"	"	"	"
perfluorooctanoate	125	Research		39.2	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	U	Research		39.2	"	"	"	"	"
perfluorohexyl sulfonate	U	Research		39.2	"	"	"	"	"
perfluoroheptanoate	51.7	J, Research		39.2	"	"	"	"	"
perfluorohexanoate	50.8	Research		39.2	"	"	"	"	"
perfluorobutyl sulfonate	50.0	Research		39.2	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	U	Research		39.2	"	"	"	"	"
perfluoropentanoate	204	Research		196	"	"	"	"	"
perfluorobutanoate	2580	Research		196	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	U	Research		39.2	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U	Research		39.2	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U	Research		39.2	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U	Research		39.2	"	"	"	"	"
N-EtFOSAA	U	Research		39.2	"	"	"	"	"
N-MeFOSAA	U	Research		39.2	"	"	"	"	"
5:3 FTCA	U	Research		39.2	"	"	"	"	"



Environmental Protection Agency Region 5

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Project: 3M Cordova

Project Number: [none]

Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

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US EPA Region 5 LSASD Analytical Services Branch

DPT-28-O-3 (2202010-01RE1)

Matrix: Soil

Sampled: Feb-21-22 14:15

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
PFDoS	U	Research		39.2	ng/kg dry	1	B22C010	Mar-09-22	Mar-10-22
NMeFOSA	U	Research		39.2	"	"	"	"	"
NEtFOSA	U	Research		39.2	"	"	"	"	"
NMeFOSE	U	J, Research		39.2	"	"	"	"	"
NEtFOSE	U	J, Research		39.2	"	"	"	"	"
HFPO-DA	50.8	Research		39.2	"	"	"	"	"
ADONA	U	Research		39.2	"	"	"	"	"
9Cl-PF3ONS	U	Research		39.2	"	"	"	"	"
11Cl-PF3OUdS	U	Research		39.2	"	"	"	"	"
PFPPrA	5800	Research		3920	"	20	"	"	Mar-11-22
NFDHA	U	Research		39.2	"	1	"	"	Mar-10-22
PFEESA	U	Research		54.8	"	"	"	"	"
PFMPA	1550	Research		39.2	"	"	"	"	"
PFMBA	216	Research		39.2	"	"	"	"	"
3:3 FTCA	U	Research		39.2	"	"	"	"	"
7:3 FTCA	U	Research		39.2	"	"	"	"	"
FHUEA	U	Research		39.2	"	"	"	"	"
FOUEA	U	Research		39.2	"	"	"	"	"
HQ-115	U	Research		39.2	"	"	"	"	"

Surrogate	Result		%REC	%REC Limits	Batch	Prepared	Analyzed
<i>D-N-EtFOSA</i>	475	Research	75.8%	70-130	"	"	"
<i>D-N-MEFOSA</i>	479	Research	76.4%	70-130	"	"	"
<i>D7-N-MeFOSE</i>	225	Research, Q	35.8%	70-130	"	"	"
<i>D9-N-EtFOSE</i>	142	Research, Q	22.7%	70-130	"	"	"
<i>MHFPO-DA</i>	459	Research	73.2%	70-130	"	"	"
<i>MPFBA</i>	607	Research	96.9%	70-130	"	"	"
<i>M5PFHxA</i>	483	Research	77.0%	70-130	"	"	"
<i>M3PFHxS</i>	451	Research	76.1%	70-130	"	"	"
<i>M8PFOA</i>	479	Research	76.4%	70-130	"	"	"
<i>M9PFNA</i>	476	Research	75.9%	70-130	"	"	"
<i>M8PFOS</i>	458	Research	76.4%	70-130	"	"	"
<i>M6PFDA</i>	485	Research	77.5%	70-130	"	"	"
<i>M7PFUnA</i>	480	Research	76.6%	70-130	"	"	"
<i>MPFDoA</i>	468	Research	74.7%	70-130	"	"	"
<i>perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS</i>	442	Research	75.5%	70-130	"	"	"



Environmental Protection Agency Region 5

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Reported:
Apr-28-22 08:37

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US EPA Region 5 LSASD Analytical Services Branch

DPT-28-O-3 (2202010-01RE1)

Matrix: Soil

Sampled: Feb-21-22 14:15

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
perfluoro- (1,2-13C2)octanesulfonateC13(2)-6:2 FTS	469	Research		78.9%		70-130	B22C010	Mar-09-22	Mar-10-22
perfluoro- (1,2-13C2)decanesulfonateC13(2)-8:2 FTS	493	Research		82.1%		70-130	"	"	"
D5-N-EtFOSAA	638	Research		102%		70-130	"	"	"
D3-N-MeFOSAA	469	Research		74.8%		70-130	"	"	"
M3PFBS	458	Research		78.7%		70-130	"	"	"
M5PFPeA	504	Research		80.4%		70-130	"	"	"
M4PFHpA	479	Research		76.4%		70-130	"	"	"
M2PFTreA	360	Research, Q		57.4%		70-130	"	"	"
M8PFOSA	507	Research		81.0%		70-130	"	"	"

DPT-20-O-3 (2202010-02)

Matrix: Soil

Sampled: Feb-21-22 12:00

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorotetradecanoate	U	J, Research		37.0	ng/kg dry	1	B22C010	Mar-09-22	Mar-10-22
perfluorotridecanoate	U	Research		37.0	"	"	"	"	"
perfluorododecanoate	U	Research		37.0	"	"	"	"	"
perfluoroundecanoate	71.7	Research		37.0	"	"	"	"	"
perfluorodecanoate	79.6	Research		37.0	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	U	Research		37.0	"	"	"	"	"
perfluorooctyl sulfonate	763	Research		37.0	"	"	"	"	"
perfluorononanoate	117	Research		37.0	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	U	Research		37.0	"	"	"	"	"
perfluorooctanoate	138	Research		37.0	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	U	Research		37.0	"	"	"	"	"
perfluorohexyl sulfonate	U	Research		37.0	"	"	"	"	"
perfluoroheptanoate	62.4	J, Research		37.0	"	"	"	"	"
perfluorohexanoate	60.7	Research		37.0	"	"	"	"	"
perfluorobutyl sulfonate	43.5	Research		37.0	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	U	Research		37.0	"	"	"	"	"
perfluoropentanoate	213	Research		185	"	"	"	"	"
perfluorobutanoate	2480	Research		185	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	U	Research		37.0	"	"	"	"	"



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Reported:
 Apr-28-22 08:37

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US EPA Region 5 LSASD Analytical Services Branch

DPT-20-O-3 (2202010-02)

Matrix: Soil

Sampled: Feb-21-22 12:00

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U	Research		37.0	ng/kg dry	1	B22C010	Mar-09-22	Mar-10-22
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U	Research		37.0	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U	Research		37.0	"	"	"	"	"
N-EtFOSAA	U	Research		37.0	"	"	"	"	"
N-MeFOSAA	U	Research		37.0	"	"	"	"	"
5:3 FTCA	U	Research		37.0	"	"	"	"	"
PFDoS	U	Research		37.0	"	"	"	"	"
NMeFOSA	U	Research		37.0	"	"	"	"	"
NEtFOSA	U	Research		37.0	"	"	"	"	"
NMeFOSE	U	J, Research		37.0	"	"	"	"	"
NEtFOSE	U	J, Research		37.0	"	"	"	"	"
HFPO-DA	46.3	Research		37.0	"	"	"	"	"
ADONA	U	Research		37.0	"	"	"	"	"
9Cl-PF3ONS	U	Research		37.0	"	"	"	"	"
11Cl-PF3OUdS	U	Research		37.0	"	"	"	"	"
PFPPrA	5450	Research		3700	"	20	"	"	Mar-11-22
NFDHA	U	Research		37.0	"	1	"	"	Mar-10-22
PFEESA	U	Research		51.8	"	"	"	"	"
PFMPA	1360	Research		740	"	20	"	"	Mar-11-22
PFMBA	223	Research		37.0	"	1	"	"	Mar-10-22
3:3 FTCA	U	Research		37.0	"	"	"	"	"
7:3 FTCA	U	Research		37.0	"	"	"	"	"
FHUEA	U	Research		37.0	"	"	"	"	"
FOUEA	U	Research		37.0	"	"	"	"	"
HQ-115	U	Research		37.0	"	"	"	"	"
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
D-N-EtFOSA	479	Research		80.9%		70-130	"	"	"
D-N-MEFOSA	474	Research		80.0%		70-130	"	"	"
D7-N-MeFOSE	227	Research, Q		38.3%		70-130	"	"	"
D9-N-EtFOSE	144	Research, Q		24.4%		70-130	"	"	"
MHFPO-DA	449	Research		75.8%		70-130	"	"	"
MPFBA	598	Research		101%		70-130	"	"	"
M5PFHxA	468	Research		79.1%		70-130	"	"	"
M3PFHxS	438	Research		78.2%		70-130	"	"	"



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Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60604

Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

PFC

US EPA Region 5 LSASD Analytical Services Branch

DPT-20-O-3 (2202010-02)

Matrix: Soil

Sampled: Feb-21-22 12:00

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
M8PFOA	465	Research		78.6%		70-130	B22C010	Mar-09-22	Mar-10-22
M9PFNA	462	Research		78.1%		70-130	"	"	"
M8PFOS	450	Research		79.4%		70-130	"	"	"
M6PFDA	475	Research		80.2%		70-130	"	"	"
M7PFUnA	475	Research		80.2%		70-130	"	"	"
MPFDoA	458	Research		77.4%		70-130	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	437	Research		78.9%		70-130	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	479	Research		85.2%		70-130	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	483	Research		85.2%		70-130	"	"	"
D5-N-EtFOSAA	579	Research		97.8%		70-130	"	"	"
D3-N-MeFOSAA	457	Research		77.1%		70-130	"	"	"
M3PFBS	441	Research		80.1%		70-130	"	"	"
M5PFPeA	491	Research		82.9%		70-130	"	"	"
M4PFHpA	463	Research		78.2%		70-130	"	"	"
M2PFTreA	319	Research, Q		53.8%		70-130	"	"	"
M8PFOSA	487	Research		82.3%		70-130	"	"	"

DPT-20-O-3 (2202010-02RE1)

Matrix: Soil

Sampled: Feb-21-22 12:00

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorotetradecanoate	U	J, Research		37.0	ng/kg dry	1	B22C010	Mar-09-22	Mar-10-22
perfluorotridecanoate	U	Research		37.0	"	"	"	"	"
perfluorododecanoate	U	Research		37.0	"	"	"	"	"
perfluoroundecanoate	70.7	Research		37.0	"	"	"	"	"
perfluorodecanoate	65.2	Research		37.0	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	U	Research		37.0	"	"	"	"	"
perfluorooctyl sulfonate	757	Research		37.0	"	"	"	"	"
perfluorononanoate	115	Research		37.0	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	U	Research		37.0	"	"	"	"	"
perfluorooctanoate	112	Research		37.0	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	U	Research		37.0	"	"	"	"	"
perfluorohexyl sulfonate	U	Research		37.0	"	"	"	"	"



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DPT-20-O-3 (2202010-02RE1)

Matrix: Soil

Sampled: Feb-21-22 12:00

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluoroheptanoate	62.4	J, Research		37.0	ng/kg dry	1	B22C010	Mar-09-22	Mar-10-22
perfluorohexanoate	54.2	Research		37.0	"	"	"	"	"
perfluorobutyl sulfonate	44.2	Research		37.0	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	U	Research		37.0	"	"	"	"	"
perfluoropentanoate	210	Research		185	"	"	"	"	"
perfluorobutanoate	2400	Research		185	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	U	Research		37.0	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U	Research		37.0	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U	Research		37.0	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U	Research		37.0	"	"	"	"	"
N-EtFOSAA	U	Research		37.0	"	"	"	"	"
N-MeFOSAA	U	Research		37.0	"	"	"	"	"
5:3 FTCA	U	Research		37.0	"	"	"	"	"
PFDoS	U	Research		37.0	"	"	"	"	"
NMeFOSA	U	Research		37.0	"	"	"	"	"
NEtFOSA	U	Research		37.0	"	"	"	"	"
NMeFOSE	U	J, Research		37.0	"	"	"	"	"
NEtFOSE	U	J, Research		37.0	"	"	"	"	"
HFPO-DA	50.3	Research		37.0	"	"	"	"	"
ADONA	U	Research		37.0	"	"	"	"	"
9Cl-PF3ONS	U	Research		37.0	"	"	"	"	"
11Cl-PF3OUdS	U	Research		37.0	"	"	"	"	"
PFPrA	5500	Research		3700	"	20	"	"	Mar-11-22
NFDHA	U	Research		37.0	"	1	"	"	Mar-10-22
PFEESA	U	Research		51.8	"	"	"	"	"
PFMPA	1320	Research		740	"	20	"	"	Mar-11-22
PFMBA	210	Research		37.0	"	1	"	"	Mar-10-22
3:3 FTCA	U	Research		37.0	"	"	"	"	"
7:3 FTCA	U	Research		37.0	"	"	"	"	"
FHUEA	U	Research		37.0	"	"	"	"	"
FOUEA	U	Research		37.0	"	"	"	"	"
HQ-115	U	Research		37.0	"	"	"	"	"

Surrogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
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DPT-20-O-3 (2202010-02RE1)

Matrix: Soil

Sampled: Feb-21-22 12:00

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
<i>D-N-EtFOSA</i>	474	Research		80.0%		70-130	B22C010	Mar-09-22	Mar-10-22
<i>D-N-MEFOSA</i>	484	Research		81.7%		70-130	"	"	"
<i>D7-N-MeFOSE</i>	215	Research, Q		36.3%		70-130	"	"	"
<i>D9-N-EtFOSE</i>	152	Research, Q		25.7%		70-130	"	"	"
<i>MHFPO-DA</i>	455	Research		76.9%		70-130	"	"	"
<i>MPFBA</i>	612	Research		103%		70-130	"	"	"
<i>M5PFHxA</i>	477	Research		80.6%		70-130	"	"	"
<i>M3PFHxS</i>	455	Research		81.4%		70-130	"	"	"
<i>M8PFOA</i>	475	Research		80.3%		70-130	"	"	"
<i>M9PFNA</i>	477	Research		80.6%		70-130	"	"	"
<i>M8PFOS</i>	469	Research		82.7%		70-130	"	"	"
<i>M6PFDA</i>	483	Research		81.7%		70-130	"	"	"
<i>M7PFUnA</i>	472	Research		79.8%		70-130	"	"	"
<i>MPFDaA</i>	455	Research		76.8%		70-130	"	"	"
<i>perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS</i>	451	Research		81.6%		70-130	"	"	"
<i>perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS</i>	491	Research		87.3%		70-130	"	"	"
<i>perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS</i>	496	Research		87.5%		70-130	"	"	"
<i>D5-N-EtFOSAA</i>	603	Research		102%		70-130	"	"	"
<i>D3-N-MeFOSAA</i>	461	Research		77.9%		70-130	"	"	"
<i>M3PFBS</i>	443	Research		80.6%		70-130	"	"	"
<i>M5PFPeA</i>	502	Research		84.8%		70-130	"	"	"
<i>M4PFHpA</i>	487	Research		82.3%		70-130	"	"	"
<i>M2PFTreA</i>	322	Research, Q		54.4%		70-130	"	"	"
<i>M8PFOSA</i>	496	Research		83.7%		70-130	"	"	"



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Project: 3M Cordova

Project Number: [none]

Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

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US EPA Region 5 LSASD Analytical Services Branch

DPT-21-O-3 (2202010-03)

Matrix: Soil

Sampled: Feb-21-22 17:25

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorotetradecanoate	U	Research		24.7	ng/kg dry	1	B22C010	Mar-09-22	Mar-10-22
perfluorotridecanoate	U	Research		24.7	"	"	"	"	"
perfluorododecanoate	U	Research		24.7	"	"	"	"	"
perfluoroundecanoate	29.2	Research		24.7	"	"	"	"	"
perfluorodecanoate	49.3	Research		24.7	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	U	Research		24.7	"	"	"	"	"
perfluorooctyl sulfonate	374	Research		24.7	"	"	"	"	"
perfluorononanoate	45.4	Research		24.7	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	U	Research		24.7	"	"	"	"	"
perfluorooctanoate	43.3	Research		24.7	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	U	Research		24.7	"	"	"	"	"
perfluorohexyl sulfonate	U	Research		24.7	"	"	"	"	"
perfluoroheptanoate	U	J, Research		24.7	"	"	"	"	"
perfluorohexanoate	U	Research		24.7	"	"	"	"	"
perfluorobutyl sulfonate	U	Research		24.7	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	U	Research		24.7	"	"	"	"	"
perfluoropentanoate	U	Research		124	"	"	"	"	"
perfluorobutanoate	1340	Research		124	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	U	Research		24.7	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U	Research		24.7	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U	Research		24.7	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U	Research		24.7	"	"	"	"	"
N-EtFOSAA	U	Research		24.7	"	"	"	"	"
N-MeFOSAA	U	Research		24.7	"	"	"	"	"
5:3 FTCA	U	Research		24.7	"	"	"	"	"
PFDoS	U	Research		24.7	"	"	"	"	"
NMeFOSA	U	Research		24.7	"	"	"	"	"
NEtFOSA	U	Research		24.7	"	"	"	"	"
NMeFOSE	U	J, Research		24.7	"	"	"	"	"
NEtFOSE	U	J, Research		24.7	"	"	"	"	"
HFPO-DA	U	Research		24.7	"	"	"	"	"
ADONA	U	Research		24.7	"	"	"	"	"
9CI-PF3ONS	U	Research		24.7	"	"	"	"	"



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DPT-21-O-3 (2202010-03)

Matrix: Soil

Sampled: Feb-21-22 17:25

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Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
11Cl-PF3OUdS	U	Research		24.7	ng/kg dry	1	B22C010	Mar-09-22	Mar-10-22
PFPPrA	1490	Research		124	"	"	"	"	"
NFDHA	U	Research		24.7	"	"	"	"	"
PFEESA	U	Research		34.6	"	"	"	"	"
PFMPA	734	J, L, Research		24.7	"	"	"	"	"
PFMBA	46.7	Research		24.7	"	"	"	"	"
3:3 FTCA	U	Research		24.7	"	"	"	"	"
7:3 FTCA	U	Research		24.7	"	"	"	"	"
FHUEA	U	Research		24.7	"	"	"	"	"
FOUEA	U	Research		24.7	"	"	"	"	"
HQ-115	U	Research		24.7	"	"	"	"	"
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
<i>D-N-EtFOSA</i>	325	Research		82.1%		70-130	"	"	"
<i>D-N-MeFOSA</i>	324	Research		81.9%		70-130	"	"	"
<i>D7-N-MeFOSE</i>	161	Research, Q		40.6%		70-130	"	"	"
<i>D9-N-EtFOSE</i>	116	Research, Q		29.4%		70-130	"	"	"
<i>MHFPO-DA</i>	310	Research		78.2%		70-130	"	"	"
<i>MPFBA</i>	399	Research		101%		70-130	"	"	"
<i>M5PFHxA</i>	312	Research		78.9%		70-130	"	"	"
<i>M3PFHxS</i>	297	Research		79.3%		70-130	"	"	"
<i>M8PFOA</i>	310	Research		78.4%		70-130	"	"	"
<i>M9PFNA</i>	308	Research		77.8%		70-130	"	"	"
<i>M8PFOS</i>	305	Research		80.4%		70-130	"	"	"
<i>M6PFDA</i>	317	Research		80.0%		70-130	"	"	"
<i>M7PFUnA</i>	318	Research		80.2%		70-130	"	"	"
<i>MPFDaA</i>	324	Research		81.9%		70-130	"	"	"
<i>perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS</i>	291	Research		78.6%		70-130	"	"	"
<i>perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS</i>	299	Research		79.5%		70-130	"	"	"
<i>perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS</i>	323	Research		85.2%		70-130	"	"	"
<i>D5-N-EtFOSAA</i>	398	Research		101%		70-130	"	"	"
<i>D3-N-MeFOSAA</i>	313	Research		78.9%		70-130	"	"	"
<i>M3PFBS</i>	289	Research		78.7%		70-130	"	"	"
<i>M5PFPeA</i>	329	Research		83.1%		70-130	"	"	"
<i>M4PFHpA</i>	310	Research		78.3%		70-130	"	"	"



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US EPA Region 5 LSASD Analytical Services Branch

DPT-21-O-3 (2202010-03)

Matrix: Soil

Sampled: Feb-21-22 17:25

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
M2PFTreA	308	Research		77.8%		70-130	B22C010	Mar-09-22	Mar-10-22
M8PFOSA	328	Research		82.7%		70-130	"	"	"

DPT-21-O-3 (2202010-03RE1)

Matrix: Soil

Sampled: Feb-21-22 17:25

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorotetradecanoate	U	Research		31.9	ng/kg dry	1	B22C010	Mar-09-22	Mar-10-22
perfluorotridecanoate	U	Research		31.9	"	"	"	"	"
perfluorododecanoate	U	Research		31.9	"	"	"	"	"
perfluoroundecanoate	37.8	Research		31.9	"	"	"	"	"
perfluorodecanoate	54.5	Research		31.9	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	U	Research		31.9	"	"	"	"	"
perfluorooctyl sulfonate	408	Research		31.9	"	"	"	"	"
perfluorononanoate	53.0	Research		31.9	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	U	Research		31.9	"	"	"	"	"
perfluorooctanoate	50.8	Research		31.9	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	U	Research		31.9	"	"	"	"	"
perfluorohexyl sulfonate	U	Research		31.9	"	"	"	"	"
perfluoroheptanoate	37.6	J, Research		31.9	"	"	"	"	"
perfluorohexanoate	U	Research		31.9	"	"	"	"	"
perfluorobutyl sulfonate	U	Research		31.9	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	U	Research		31.9	"	"	"	"	"
perfluoropentanoate	U	Research		159	"	"	"	"	"
perfluorobutanoate	1280	Research		159	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	U	Research		31.9	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U	Research		31.9	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U	Research		31.9	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U	Research		31.9	"	"	"	"	"
N-EtFOSAA	U	Research		31.9	"	"	"	"	"
N-MeFOSAA	U	Research		31.9	"	"	"	"	"
5:3 FTCA	U	Research		31.9	"	"	"	"	"



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DPT-21-O-3 (2202010-03RE1)

Matrix: Soil

Sampled: Feb-21-22 17:25

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
PFDoS	U	Research		31.9	ng/kg dry	1	B22C010	Mar-09-22	Mar-10-22
NMeFOSA	U	Research		31.9	"	"	"	"	"
NEtFOSA	U	Research		31.9	"	"	"	"	"
NMeFOSE	U	J, Research		31.9	"	"	"	"	"
NEtFOSE	U	J, Research		31.9	"	"	"	"	"
HFPO-DA	U	Research		31.9	"	"	"	"	"
ADONA	U	Research		31.9	"	"	"	"	"
9Cl-PF3ONS	U	Research		31.9	"	"	"	"	"
11Cl-PF3OUdS	U	Research		31.9	"	"	"	"	"
PFPPrA	1420	Research		159	"	"	"	"	"
NFDHA	U	Research		31.9	"	"	"	"	"
PFEESA	U	Research		44.6	"	"	"	"	"
PFMPA	696	J, L, Research		31.9	"	"	"	"	"
PFMBA	45.1	Research		31.9	"	"	"	"	"
3:3 FTCA	U	Research		31.9	"	"	"	"	"
7:3 FTCA	U	Research		31.9	"	"	"	"	"
FHUEA	U	Research		31.9	"	"	"	"	"
FOUEA	U	Research		31.9	"	"	"	"	"
HQ-115	U	Research		31.9	"	"	"	"	"

Surrogate	Result		%REC	%REC Limits	Batch	Prepared	Analyzed
<i>D-N-EtFOSA</i>	447	Research	87.7%	70-130	"	"	"
<i>D-N-MEFOSA</i>	442	Research	86.8%	70-130	"	"	"
<i>D7-N-MeFOSE</i>	256	Research, Q	50.2%	70-130	"	"	"
<i>D9-N-EtFOSE</i>	178	Research, Q	34.8%	70-130	"	"	"
<i>MHFPO-DA</i>	431	Research	84.5%	70-130	"	"	"
<i>MPFBA</i>	516	Research	101%	70-130	"	"	"
<i>M5PFHxA</i>	414	Research	81.2%	70-130	"	"	"
<i>M3PFHxS</i>	406	Research	84.3%	70-130	"	"	"
<i>M8PFOA</i>	426	Research	83.6%	70-130	"	"	"
<i>M9PFNA</i>	418	Research	81.9%	70-130	"	"	"
<i>M8PFOS</i>	411	Research	84.3%	70-130	"	"	"
<i>M6PFDA</i>	430	Research	84.3%	70-130	"	"	"
<i>M7PFUnA</i>	431	Research	84.5%	70-130	"	"	"
<i>MPFDoA</i>	444	Research	87.0%	70-130	"	"	"
<i>perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS</i>	395	Research	83.0%	70-130	"	"	"



Environmental Protection Agency Region 5

US EPA Region 5 LSASD Analytical Services Branch

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Water Division, US EPA Region 5
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Chicago IL, 60604

Project: 3M Cordova

Project Number: [none]

Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

PFC

US EPA Region 5 LSASD Analytical Services Branch

DPT-21-O-3 (2202010-03RE1)

Matrix: Soil

Sampled: Feb-21-22 17:25

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
<i>perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS</i>	415	Research		85.9%		70-130	B22C010	Mar-09-22	Mar-10-22
<i>perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS</i>	419	Research		85.8%		70-130	"	"	"
<i>D5-N-EtFOSAA</i>	540	Research		106%		70-130	"	"	"
<i>D3-N-MeFOSAA</i>	424	Research		83.2%		70-130	"	"	"
<i>M3PFBS</i>	394	Research		83.2%		70-130	"	"	"
<i>M5PFPeA</i>	442	Research		86.7%		70-130	"	"	"
<i>M4PFHpA</i>	427	Research		83.7%		70-130	"	"	"
<i>M2PFTreA</i>	450	Research		88.2%		70-130	"	"	"
<i>M8PFOSA</i>	442	Research		86.7%		70-130	"	"	"

DPT-22-O-3 (2202010-04)

Matrix: Soil

Sampled: Feb-22-22 10:50

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorotetradecanoate	U	Research		25.8	ng/kg dry	1	B22C010	Mar-09-22	Mar-10-22
perfluorotridecanoate	U	Research		25.8	"	"	"	"	"
perfluorododecanoate	U	Research		25.8	"	"	"	"	"
perfluoroundecanoate	28.8	Research		25.8	"	"	"	"	"
perfluorodecanoate	43.7	Research		25.8	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	U	Research		25.8	"	"	"	"	"
perfluorooctyl sulfonate	668	Research		25.8	"	"	"	"	"
perfluorononanoate	70.4	Research		25.8	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	U	Research		25.8	"	"	"	"	"
perfluorooctanoate	79.4	Research		25.8	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	U	Research		25.8	"	"	"	"	"
perfluorohexyl sulfonate	U	Research		25.8	"	"	"	"	"
perfluoroheptanoate	28.3	Research, J		25.8	"	"	"	"	"
perfluorohexanoate	28.6	Research		25.8	"	"	"	"	"
perfluorobutyl sulfonate	62.5	Research		25.8	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	U	Research		25.8	"	"	"	"	"
perfluoropentanoate	158	Research		129	"	"	"	"	"
perfluorobutanoate	2530	Research		129	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	U	Research		25.8	"	"	"	"	"



Environmental Protection Agency Region 5

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Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

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US EPA Region 5 LSASD Analytical Services Branch

DPT-22-O-3 (2202010-04)

Matrix: Soil

Sampled: Feb-22-22 10:50

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U	Research		25.8	ng/kg dry	1	B22C010	Mar-09-22	Mar-10-22
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U	Research		25.8	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U	Research		25.8	"	"	"	"	"
N-EtFOSAA	U	Research		25.8	"	"	"	"	"
N-MeFOSAA	U	Research		25.8	"	"	"	"	"
5:3 FTCA	U	Research		25.8	"	"	"	"	"
PFDoS	U	Research		25.8	"	"	"	"	"
NMeFOSA	U	Research		25.8	"	"	"	"	"
NEtFOSA	U	Research		25.8	"	"	"	"	"
NMeFOSE	U	J, Research		25.8	"	"	"	"	"
NEtFOSE	U	J, Research		25.8	"	"	"	"	"
HFPO-DA	U	Research		25.8	"	"	"	"	"
ADONA	U	Research		25.8	"	"	"	"	"
9Cl-PF3ONS	U	Research		25.8	"	"	"	"	"
11Cl-PF3OUdS	U	Research		25.8	"	"	"	"	"
PFPPrA	2220	Research		129	"	"	"	"	"
NFDHA	U	Research		25.8	"	"	"	"	"
PFEESA	U	Research		36.1	"	"	"	"	"
PFMPA	682	Research		25.8	"	"	"	"	"
PFMBA	103	Research		25.8	"	"	"	"	"
3:3 FTCA	U	Research		25.8	"	"	"	"	"
7:3 FTCA	U	Research		25.8	"	"	"	"	"
FHUEA	U	Research		25.8	"	"	"	"	"
FOUEA	U	Research		25.8	"	"	"	"	"
HQ-115	U	Research		25.8	"	"	"	"	"
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
D-N-EtFOSA	374	Research		90.6%		70-130	"	"	"
D-N-MEFOSA	356	Research		86.2%		70-130	"	"	"
D7-N-MeFOSE	253	Research, Q		61.3%		70-130	"	"	"
D9-N-EtFOSE	212	Research, Q		51.4%		70-130	"	"	"
MHFPO-DA	350	Research		84.8%		70-130	"	"	"
MPFBA	500	Research		121%		70-130	"	"	"
M5PFHxA	380	Research		92.1%		70-130	"	"	"
M3PFHxS	367	Research		94.1%		70-130	"	"	"



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Project Number: [none]

Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

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DPT-22-O-3 (2202010-04)

Matrix: Soil

Sampled: Feb-22-22 10:50

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
M8PFOA	374	Research		90.7%		70-130	B22C010	Mar-09-22	Mar-10-22
M9PFNA	371	Research		90.0%		70-130	"	"	"
M8PFOS	382	Research		96.7%		70-130	"	"	"
M6PFDA	386	Research		93.6%		70-130	"	"	"
M7PFUnA	390	Research		94.6%		70-130	"	"	"
MPFDoA	394	Research		95.5%		70-130	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	363	Research		94.2%		70-130	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	352	Research		89.9%		70-130	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	380	Research		96.3%		70-130	"	"	"
D5-N-EtFOSAA	471	Research		114%		70-130	"	"	"
D3-N-MeFOSAA	378	Research		91.7%		70-130	"	"	"
M3PFBS	356	Research		92.9%		70-130	"	"	"
M5PFPeA	397	Research		96.3%		70-130	"	"	"
M4PFHpA	377	Research		91.4%		70-130	"	"	"
M2PFTreA	398	Research		96.5%		70-130	"	"	"
M8PFOSA	400	Research		97.0%		70-130	"	"	"

DPT-22-O-3 (2202010-04RE1)

Matrix: Soil

Sampled: Feb-22-22 10:50

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorotetradecanoate	U	Research		26.1	ng/kg dry	1	B22C010	Mar-09-22	Mar-10-22
perfluorotridecanoate	U	Research		26.1	"	"	"	"	"
perfluorododecanoate	U	Research		26.1	"	"	"	"	"
perfluoroundecanoate	U	Research		26.1	"	"	"	"	"
perfluorodecanoate	34.2	Research		26.1	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	U	Research		26.1	"	"	"	"	"
perfluorooctyl sulfonate	567	Research		26.1	"	"	"	"	"
perfluorononanoate	53.4	Research		26.1	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	U	Research		26.1	"	"	"	"	"
perfluorooctanoate	59.2	Research		26.1	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	U	Research		26.1	"	"	"	"	"
perfluorohexyl sulfonate	U	Research		26.1	"	"	"	"	"



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 Apr-28-22 08:37

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DPT-22-O-3 (2202010-04RE1)

Matrix: Soil

Sampled: Feb-22-22 10:50

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluoroheptanoate	U	Research, J		26.1	ng/kg dry	1	B22C010	Mar-09-22	Mar-10-22
perfluorohexanoate	U	Research		26.1	"	"	"	"	"
perfluorobutyl sulfonate	51.9	Research		26.1	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	U	Research		26.1	"	"	"	"	"
perfluoropentanoate	U	Research		130	"	"	"	"	"
perfluorobutanoate	1930	Research		130	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	U	Research		26.1	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U	Research		26.1	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U	Research		26.1	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U	Research		26.1	"	"	"	"	"
N-EtFOSAA	U	Research		26.1	"	"	"	"	"
N-MeFOSAA	U	Research		26.1	"	"	"	"	"
5:3 FTCA	U	Research		26.1	"	"	"	"	"
PFDoS	U	Research		26.1	"	"	"	"	"
NMeFOSA	U	Research		26.1	"	"	"	"	"
NEtFOSA	U	Research		26.1	"	"	"	"	"
NMeFOSE	U	Research		26.1	"	"	"	"	"
NEtFOSE	U	J, Research		26.1	"	"	"	"	"
HFPO-DA	U	Research		26.1	"	"	"	"	"
ADONA	U	Research		26.1	"	"	"	"	"
9Cl-PF3ONS	U	Research		26.1	"	"	"	"	"
11Cl-PF3OUdS	U	Research		26.1	"	"	"	"	"
PFPrA	1740	Research		130	"	"	"	"	"
NFDHA	U	Research		26.1	"	"	"	"	"
PFEESA	U	Research		36.5	"	"	"	"	"
PFMPA	536	Research		26.1	"	"	"	"	"
PFMBA	81.9	Research		26.1	"	"	"	"	"
3:3 FTCA	U	Research		26.1	"	"	"	"	"
7:3 FTCA	U	Research		26.1	"	"	"	"	"
FHUEA	U	Research		26.1	"	"	"	"	"
FOUEA	U	Research		26.1	"	"	"	"	"
HQ-115	U	Research		26.1	"	"	"	"	"

Surrogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
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Environmental Protection Agency Region 5
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Project: 3M Cordova
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US EPA Region 5 LSASD Analytical Services Branch

DPT-22-O-3 (2202010-04RE1)

Matrix: Soil

Sampled: Feb-22-22 10:50

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
D-N-EtFOSA	406	Research		97.2%		70-130	B22C010	Mar-09-22	Mar-10-22
D-N-MEFOSA	408	Research		97.7%		70-130	"	"	"
D7-N-MeFOSE	316	Research		75.8%		70-130	"	"	"
D9-N-EtFOSE	254	Research, Q		60.9%		70-130	"	"	"
MHFPO-DA	394	Research		94.4%		70-130	"	"	"
MPFBA	522	Research		125%		70-130	"	"	"
M5PFHxA	395	Research		94.7%		70-130	"	"	"
M3PFHxS	377	Research		95.4%		70-130	"	"	"
M8PFOA	394	Research		94.4%		70-130	"	"	"
M9PFNA	393	Research		94.1%		70-130	"	"	"
M8PFOS	389	Research		97.3%		70-130	"	"	"
M6PFDA	398	Research		95.4%		70-130	"	"	"
M7PFUnA	403	Research		96.5%		70-130	"	"	"
MPFDaA	405	Research		97.0%		70-130	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	381	Research		97.6%		70-130	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	376	Research		95.0%		70-130	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	405	Research		101%		70-130	"	"	"
D5-N-EtFOSAA	477	Research		114%		70-130	"	"	"
D3-N-MeFOSAA	391	Research		93.8%		70-130	"	"	"
M3PFBS	379	Research		97.7%		70-130	"	"	"
M5PFPeA	421	Research		101%		70-130	"	"	"
M4PFHpA	394	Research		94.4%		70-130	"	"	"
M2PFTreA	397	Research		95.0%		70-130	"	"	"
M8PFOSA	410	Research		98.3%		70-130	"	"	"



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Project: 3M Cordova

Project Number: [none]

Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

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US EPA Region 5 LSASD Analytical Services Branch

DPT-23-O-3 (2202010-05)

Matrix: Soil

Sampled: Feb-22-22 16:10

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorotetradecanoate	U	Research		24.9	ng/kg dry	1	B22C010	Mar-09-22	Mar-10-22
perfluorotridecanoate	U	Research		24.9	"	"	"	"	"
perfluorododecanoate	U	Research		24.9	"	"	"	"	"
perfluoroundecanoate	28.8	Research		24.9	"	"	"	"	"
perfluorodecanoate	25.5	Research		24.9	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	U	Research		24.9	"	"	"	"	"
perfluorooctyl sulfonate	216	Research		24.9	"	"	"	"	"
perfluorononanoate	61.6	Research		24.9	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	U	Research		24.9	"	"	"	"	"
perfluorooctanoate	52.4	Research		24.9	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	U	Research		24.9	"	"	"	"	"
perfluorohexyl sulfonate	U	Research		24.9	"	"	"	"	"
perfluoroheptanoate	26.5	J, Research		24.9	"	"	"	"	"
perfluorohexanoate	U	Research		24.9	"	"	"	"	"
perfluorobutyl sulfonate	24.9	Research		24.9	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	U	Research		24.9	"	"	"	"	"
perfluoropentanoate	U	Research		124	"	"	"	"	"
perfluorobutanoate	2460	Research		124	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	U	Research		24.9	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U	Research		24.9	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U	Research		24.9	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U	Research		24.9	"	"	"	"	"
N-EtFOSAA	U	Research		24.9	"	"	"	"	"
N-MeFOSAA	U	Research		24.9	"	"	"	"	"
5:3 FTCA	U	Research		24.9	"	"	"	"	"
PFDoS	U	Research		24.9	"	"	"	"	"
NMeFOSA	U	Research		24.9	"	"	"	"	"
NEtFOSA	U	Research		24.9	"	"	"	"	"
NMeFOSE	U	J, Research		24.9	"	"	"	"	"
NEtFOSE	U	J, Research		24.9	"	"	"	"	"
HFPO-DA	U	Research		24.9	"	"	"	"	"
ADONA	U	Research		24.9	"	"	"	"	"
9CI-PF3ONS	U	Research		24.9	"	"	"	"	"



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Project: 3M Cordova

Project Number: [none]

Project Manager: Jennifer Wilson

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Apr-28-22 08:37

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US EPA Region 5 LSASD Analytical Services Branch

DPT-23-O-3 (2202010-05)

Matrix: Soil

Sampled: Feb-22-22 16:10

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
11Cl-PF3OUdS	U	Research		24.9	ng/kg dry	1	B22C010	Mar-09-22	Mar-10-22
PFPPrA	2460	Research		124	"	"	"	"	"
NFDHA	U	Research		24.9	"	"	"	"	"
PFEESA	U	Research		34.8	"	"	"	"	"
PFMPA	633	Research		24.9	"	"	"	"	"
PFMBA	101	Research		24.9	"	"	"	"	"
3:3 FTCA	U	Research		24.9	"	"	"	"	"
7:3 FTCA	U	Research		24.9	"	"	"	"	"
FHUEA	U	Research		24.9	"	"	"	"	"
FOUEA	U	Research		24.9	"	"	"	"	"
HQ-115	U	Research		24.9	"	"	"	"	"
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
D-N-EtFOSA	326	Research		81.9%		70-130	"	"	"
D-N-MeFOSA	333	Research		83.7%		70-130	"	"	"
D7-N-MeFOSE	148	Research, Q		37.2%		70-130	"	"	"
D9-N-EtFOSE	80.3	Research, Q		20.2%		70-130	"	"	"
MHFPO-DA	307	Research		77.2%		70-130	"	"	"
MPFBA	383	Research		96.3%		70-130	"	"	"
M5PFHxA	304	Research		76.4%		70-130	"	"	"
M3PFHxS	292	Research		77.7%		70-130	"	"	"
M8PFOA	309	Research		77.7%		70-130	"	"	"
M9PFNA	306	Research		76.9%		70-130	"	"	"
M8PFOS	293	Research		77.0%		70-130	"	"	"
M6PFDA	320	Research		80.4%		70-130	"	"	"
M7PFUnA	319	Research		80.2%		70-130	"	"	"
MPFDoA	325	Research		81.7%		70-130	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	299	Research		80.4%		70-130	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	329	Research		87.0%		70-130	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	342	Research		89.6%		70-130	"	"	"
D5-N-EtFOSAA	392	Research		98.4%		70-130	"	"	"
D3-N-MeFOSAA	303	Research		76.1%		70-130	"	"	"
M3PFBS	284	Research		76.8%		70-130	"	"	"
M5PFPeA	320	Research		80.5%		70-130	"	"	"
M4PFHpA	310	Research		77.8%		70-130	"	"	"



Environmental Protection Agency Region 5

US EPA Region 5 LSASD Analytical Services Branch

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Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60604

Project: 3M Cordova

Project Number: [none]

Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

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US EPA Region 5 LSASD Analytical Services Branch

DPT-23-O-3 (2202010-05)

Matrix: Soil

Sampled: Feb-22-22 16:10

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
M2PFTreA	288	Research		72.4%		70-130	B22C010	Mar-09-22	Mar-10-22
M8PFOSA	323	Research		81.2%		70-130	"	"	"

DPT-23-O-3 (2202010-05RE1)

Matrix: Soil

Sampled: Feb-22-22 16:10

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorotetradecanoate	U	Research		27.9	ng/kg dry	1	B22C010	Mar-09-22	Mar-10-22
perfluorotridecanoate	U	Research		27.9	"	"	"	"	"
perfluorododecanoate	55.3	Research		27.9	"	"	"	"	"
perfluoroundecanoate	40.4	Research		27.9	"	"	"	"	"
perfluorodecanoate	92.9	Research		27.9	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	U	Research		27.9	"	"	"	"	"
perfluorooctyl sulfonate	264	Research		27.9	"	"	"	"	"
perfluorononanoate	84.3	Research		27.9	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	U	Research		27.9	"	"	"	"	"
perfluorooctanoate	181	Research		27.9	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	U	Research		27.9	"	"	"	"	"
perfluorohexyl sulfonate	U	Research		27.9	"	"	"	"	"
perfluoroheptanoate	47.5	J, Research		27.9	"	"	"	"	"
perfluorohexanoate	40.3	Research		27.9	"	"	"	"	"
perfluorobutyl sulfonate	34.0	Research		27.9	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	U	Research		27.9	"	"	"	"	"
perfluoropentanoate	U	Research		140	"	"	"	"	"
perfluorobutanoate	3660	K, Research		140	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	U	Research		27.9	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U	Research		27.9	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U	Research		27.9	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U	Research		27.9	"	"	"	"	"
N-EtFOSAA	U	Research		27.9	"	"	"	"	"
N-MeFOSAA	U	Research		27.9	"	"	"	"	"
5:3 FTCA	U	Research		27.9	"	"	"	"	"



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US EPA Region 5 LSASD Analytical Services Branch

DPT-23-O-3 (2202010-05RE1)

Matrix: Soil

Sampled: Feb-22-22 16:10

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
PFDoS	U	Research		27.9	ng/kg dry	1	B22C010	Mar-09-22	Mar-10-22
NMeFOSA	U	Research		27.9	"	"	"	"	"
NEtFOSA	U	Research		27.9	"	"	"	"	"
NMeFOSE	U	J, Research		27.9	"	"	"	"	"
NEtFOSE	U	J, Research		27.9	"	"	"	"	"
HFPO-DA	U	Research		27.9	"	"	"	"	"
ADONA	U	Research		27.9	"	"	"	"	"
9Cl-PF3ONS	U	Research		27.9	"	"	"	"	"
11Cl-PF3OUdS	U	Research		27.9	"	"	"	"	"
PFPPrA	3650	Research		140	"	"	"	"	"
NFDHA	U	Research		27.9	"	"	"	"	"
PFEESA	U	Research		39.1	"	"	"	"	"
PFMPA	833	Research		27.9	"	"	"	"	"
PFMBA	126	Research		27.9	"	"	"	"	"
3:3 FTCA	U	Research		27.9	"	"	"	"	"
7:3 FTCA	U	Research		27.9	"	"	"	"	"
FHUEA	U	Research		27.9	"	"	"	"	"
FOUEA	36.4	Research		27.9	"	"	"	"	"
HQ-115	U	Research		27.9	"	"	"	"	"

Surrogate	Result		%REC	%REC Limits	Batch	Prepared	Analyzed
D-N-EtFOSA	423	Research	94.8%	70-130	"	"	"
D-N-MEFOSA	434	Research	97.2%	70-130	"	"	"
D7-N-MeFOSE	229	Research, Q	51.3%	70-130	"	"	"
D9-N-EtFOSE	147	Research, Q	32.9%	70-130	"	"	"
MHFPO-DA	385	Research	86.3%	70-130	"	"	"
MPFBA	637	Research, Q	143%	70-130	"	"	"
M5PFHxA	461	Research	103%	70-130	"	"	"
M3PFHxS	449	Research	106%	70-130	"	"	"
M8PFOA	475	Research	106%	70-130	"	"	"
M9PFNA	477	Research	107%	70-130	"	"	"
M8PFOS	466	Research	109%	70-130	"	"	"
M6PFDA	492	Research	110%	70-130	"	"	"
M7PFUnA	501	Research	112%	70-130	"	"	"
MPFDoA	506	Research	113%	70-130	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	432	Research	104%	70-130	"	"	"



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DPT-23-O-3 (2202010-05RE1)

Matrix: Soil

Sampled: Feb-22-22 16:10

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
<i>perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS</i>	504	Research		119%		70-130	B22C010	Mar-09-22	Mar-10-22
<i>perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS</i>	610	Research, Q		143%		70-130	"	"	"
<i>D5-N-EtFOSAA</i>	545	Research		122%		70-130	"	"	"
<i>D3-N-MeFOSAA</i>	473	Research		106%		70-130	"	"	"
<i>M3PFBS</i>	431	Research		104%		70-130	"	"	"
<i>M5PFPeA</i>	481	Research		108%		70-130	"	"	"
<i>M4PFHpA</i>	468	Research		105%		70-130	"	"	"
<i>M2PFTreA</i>	465	Research		104%		70-130	"	"	"
<i>M8PFOSA</i>	496	Research		111%		70-130	"	"	"

DPT-24-O-3 (2202010-06)

Matrix: Soil

Sampled: Feb-23-22 11:10

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorotetradecanoate	U	J, Research		34.2	ng/kg dry	1	B22C010	Mar-09-22	Mar-10-22
perfluorotridecanoate	U	J, Research		34.2	"	"	"	"	"
perfluorododecanoate	50.6	J, Research		34.2	"	"	"	"	"
perfluoroundecanoate	57.9	J, Research		34.2	"	"	"	"	"
perfluorodecanoate	108	J, Research		34.2	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	U	J, Research		34.2	"	"	"	"	"
perfluorooctyl sulfonate	981	J, Research		34.2	"	"	"	"	"
perfluorononanoate	141	J, Research		34.2	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	U	J, Research		34.2	"	"	"	"	"
perfluorooctanoate	346	J, Research		34.2	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	U	J, Research		34.2	"	"	"	"	"
perfluorohexyl sulfonate	U	J, Research		34.2	"	"	"	"	"
perfluoroheptanoate	78.2	J, Research		34.2	"	"	"	"	"
perfluorohexanoate	64.4	J, Research		34.2	"	"	"	"	"
perfluorobutyl sulfonate	71.1	J, Research		34.2	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	U	J, Research		34.2	"	"	"	"	"
perfluoropentanoate	219	J, Research		171	"	"	"	"	"
perfluorobutanoate	3780	Research, J, K		171	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	U	J, Research		34.2	"	"	"	"	"



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DPT-24-O-3 (2202010-06)

Matrix: Soil

Sampled: Feb-23-22 11:10

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U	J, Research		34.2	ng/kg dry	1	B22C010	Mar-09-22	Mar-10-22
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U	J, Research		34.2	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U	J, Research		34.2	"	"	"	"	"
N-EtFOSAA	U	J, Research		34.2	"	"	"	"	"
N-MeFOSAA	U	J, Research		34.2	"	"	"	"	"
5:3 FTCA	U	J, Research		34.2	"	"	"	"	"
PFDoS	U	J, Research		34.2	"	"	"	"	"
NMeFOSA	U	J, Research		34.2	"	"	"	"	"
NEtFOSA	U	J, Research		34.2	"	"	"	"	"
NMeFOSE	U	J, Research		34.2	"	"	"	"	"
NEtFOSE	U	J, Research		34.2	"	"	"	"	"
HFPO-DA	51.4	Research, J		34.2	"	"	"	"	"
ADONA	U	J, Research		34.2	"	"	"	"	"
9Cl-PF3ONS	U	J, Research		34.2	"	"	"	"	"
11Cl-PF3OUdS	U	Research, J		34.2	"	"	"	"	"
PFPPrA	6250	J, Research		3420	"	20	"	"	Mar-11-22
NFDHA	U	Research, J		34.2	"	1	"	"	Mar-10-22
PFEESA	U	J, Research		47.9	"	"	"	"	"
PFMPA	1090	J, Research		34.2	"	"	"	"	"
PFMBA	222	J, Research		34.2	"	"	"	"	"
3:3 FTCA	U	J, Research		34.2	"	"	"	"	"
7:3 FTCA	U	J, Research		34.2	"	"	"	"	"
FHUEA	U	J, Research		34.2	"	"	"	"	"
FOUEA	U	J, Research		34.2	"	"	"	"	"
HQ-115	54.9	J, Research		34.2	"	"	"	"	"
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
D-N-EtFOSA	553	J, Research		101%		70-130	"	"	"
D-N-MEFOSA	526	Research, J		96.3%		70-130	"	"	"
D7-N-MeFOSE	287	J, Research, Q		52.4%		70-130	"	"	"
D9-N-EtFOSE	219	J, Research, Q		40.1%		70-130	"	"	"
MHFPO-DA	469	Research, J		85.7%		70-130	"	"	"
MPFBA	741	J, Research, Q		135%		70-130	"	"	"
M5PFHxA	535	J, Research		97.9%		70-130	"	"	"
M3PFHxS	507	J, Research		98.0%		70-130	"	"	"



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DPT-24-O-3 (2202010-06)

Matrix: Soil

Sampled: Feb-23-22 11:10

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
M8PFOA	534	J, Research		97.7%		70-130	B22C010	Mar-09-22	Mar-10-22
M9PFNA	535	J, Research		97.8%		70-130	"	"	"
M8PFOS	527	J, Research		101%		70-130	"	"	"
M6PFDA	553	J, Research		101%		70-130	"	"	"
M7PFUnA	544	J, Research		99.5%		70-130	"	"	"
MPFDoA	526	J, Research		96.2%		70-130	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	504	J, Research		98.5%		70-130	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	553	Research, J		107%		70-130	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	615	J, Research		117%		70-130	"	"	"
D5-N-EtFOSAA	639	J, Research		117%		70-130	"	"	"
D3-N-MeFOSAA	511	J, Research		93.4%		70-130	"	"	"
M3PFBS	492	J, Research		96.9%		70-130	"	"	"
M5PFPeA	560	Research, J		102%		70-130	"	"	"
M4PFHpA	538	J, Research		98.3%		70-130	"	"	"
M2PFTreA	365	J, Research, Q		66.7%		70-130	"	"	"
M8PFOSA	567	J, Research		104%		70-130	"	"	"

DPT-24-O-3 (2202010-06RE1)

Matrix: Soil

Sampled: Feb-23-22 11:10

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluorotetradecanoate	U	J, Research		27.8	ng/kg dry	1	B22C010	Mar-09-22	Mar-10-22
perfluorotridecanoate	U	J, Research		27.8	"	"	"	"	"
perfluorododecanoate	U	J, Research		27.8	"	"	"	"	"
perfluoroundecanoate	41.8	J, Research		27.8	"	"	"	"	"
perfluorodecanoate	49.8	J, Research		27.8	"	"	"	"	"
perfluoro-1-decanesulfonate (PFDS)	U	J, Research		27.8	"	"	"	"	"
perfluorooctyl sulfonate	766	J, Research		27.8	"	"	"	"	"
perfluorononanoate	112	Research, J		27.8	"	"	"	"	"
perfluoro-1-nonanesulfonate (PFNS)	U	J, Research		27.8	"	"	"	"	"
perfluorooctanoate	244	J, Research		27.8	"	"	"	"	"
perfluoro-1-heptanesulfonate (PFHpS)	U	J, Research		27.8	"	"	"	"	"
perfluorohexyl sulfonate	U	J, Research		27.8	"	"	"	"	"



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Matrix: Soil

Sampled: Feb-23-22 11:10

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
perfluoroheptanoate	83.6	J, Research		27.8	ng/kg dry	1	B22C010	Mar-09-22	Mar-10-22
perfluorohexanoate	62.1	J, Research		27.8	"	"	"	"	"
perfluorobutyl sulfonate	67.2	J, Research		27.8	"	"	"	"	"
perfluoro-1-pentanesulfonate (PFPeS)	U	J, Research		27.8	"	"	"	"	"
perfluoropentanoate	246	J, Research		139	"	"	"	"	"
perfluorobutanoate	4080	Research, J		139	"	"	"	"	"
perfluoro-1-octanesulfonamide (FOSA)	U	J, Research		27.8	"	"	"	"	"
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U	J, Research		27.8	"	"	"	"	"
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U	J, Research		27.8	"	"	"	"	"
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U	J, Research		27.8	"	"	"	"	"
N-EtFOSAA	U	J, Research		27.8	"	"	"	"	"
N-MeFOSAA	U	J, Research		27.8	"	"	"	"	"
5:3 FTCA	U	J, Research		27.8	"	"	"	"	"
PFDoS	U	J, Research		27.8	"	"	"	"	"
NMeFOSA	U	J, Research		27.8	"	"	"	"	"
NEtFOSA	U	J, Research		27.8	"	"	"	"	"
NMeFOSE	U	J, Research		27.8	"	"	"	"	"
NEtFOSE	U	J, Research		27.8	"	"	"	"	"
HFPO-DA	47.5	J, Research		27.8	"	"	"	"	"
ADONA	U	J, Research		27.8	"	"	"	"	"
9Cl-PF3ONS	U	J, Research		27.8	"	"	"	"	"
11Cl-PF3OUdS	U	J, Research		27.8	"	"	"	"	"
PFPrA	5790	Research, J		2780	"	20	"	"	Mar-11-22
NFDHA	U	Research, J		27.8	"	1	"	"	Mar-10-22
PFEESA	U	J, Research		38.9	"	"	"	"	"
PFMPA	977	J, Research		556	"	20	"	"	Mar-11-22
PFMBA	275	J, Research		27.8	"	1	"	"	Mar-10-22
3:3 FTCA	U	J, Research		27.8	"	"	"	"	"
7:3 FTCA	U	J, Research		27.8	"	"	"	"	"
FHUEA	U	J, Research		27.8	"	"	"	"	"
FOUEA	U	J, Research		27.8	"	"	"	"	"
HQ-115	40.0	J, Research		27.8	"	"	"	"	"

Surrogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
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DPT-24-O-3 (2202010-06RE1)

Matrix: Soil

Sampled: Feb-23-22 11:10

Received: Feb-25-22 15:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surrogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
D-N-EtFOSA	334	J, Research		75.1%		70-130	B22C010	Mar-09-22	Mar-10-22
D-N-MEFOSA	364	J, Research		81.8%		70-130	"	"	"
D7-N-MeFOSE	107	J, Research, Q		24.1%		70-130	"	"	"
D9-N-EtFOSE	48.4	J, Research, Q		10.9%		70-130	"	"	"
MHFPO-DA	330	Research, J		74.1%		70-130	"	"	"
MPFBA	483	J, Research		109%		70-130	"	"	"
M5PFHxA	370	J, Research		83.0%		70-130	"	"	"
M3PFHxS	348	J, Research		82.6%		70-130	"	"	"
M8PFOA	370	J, Research		83.1%		70-130	"	"	"
M9PFNA	363	J, Research		81.5%		70-130	"	"	"
M8PFOS	355	J, Research		83.4%		70-130	"	"	"
M6PFDA	366	J, Research		82.3%		70-130	"	"	"
M7PFUnA	351	J, Research		78.9%		70-130	"	"	"
MPFDnA	313	J, Research		70.4%		70-130	"	"	"
perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:2 FTS	361	J, Research		86.7%		70-130	"	"	"
perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	361	J, Research		85.5%		70-130	"	"	"
perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	383	J, Research		89.8%		70-130	"	"	"
D5-N-EtFOSAA	436	J, Research		97.9%		70-130	"	"	"
D3-N-MeFOSAA	344	J, Research		77.3%		70-130	"	"	"
M3PFBS	358	J, Research		86.5%		70-130	"	"	"
M5PFPeA	390	J, Research		87.5%		70-130	"	"	"
M4PFHpA	375	J, Research		84.3%		70-130	"	"	"
M2PFTreA	106	J, Research, Q		23.8%		70-130	"	"	"
M8PFOSA	381	J, Research		85.6%		70-130	"	"	"



Environmental Protection Agency Region 5

US EPA Region 5 LSASD Analytical Services Branch

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Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60604

Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

Analysis by LC MS MS - Quality Control US EPA Region 5 LSASD Analytical Services Branch

Batch B22C009 - *** DEFAULT PREP ***

Blank (B22C009-BLK1)

Prepared & Analyzed: Mar-09-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorotridecanoate	U	J		10.0	ng/L						
perfluorododecanoate	U	J		10.0	"						
perfluoroundecanoate	U	J		10.0	"						
perfluorodecanoate	U	J		10.0	"						
perfluorooctyl sulfonate	U	J		10.0	"						
perfluorononanoate	U	J		10.0	"						
perfluorooctanoate	U	J		10.0	"						
perfluorohexyl sulfonate	U			10.0	"						
perfluoroheptanoate	U			40.0	"						
perfluorohexanoate	U	J		10.0	"						
perfluorobutyl sulfonate	U	J		10.0	"						
perfluoropentanoate	U			50.0	"						
perfluorobutanoate	U			50.0	"						
perfluorotetradecanoate	U	J		10.0	"						
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U	J		10.0	"						
NMeFOSA	U			10.0	"						
NEtFOSA	U			10.0	"						
perfluoro-1-pentanesulfonate (PFPeS)	U			10.0	"						
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U	J		10.0	"						
NMeFOSE	U			10.0	"						
NEtFOSE	U			10.0	"						
perfluoro-1-heptanesulfonate (PFHpS)	U			10.0	"						
HFPO-DA	U			10.0	"						
perfluoro-1-octanesulfonamide (FOSA)	U	J		10.0	"						
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U	J		10.0	"						
ADONA	U			10.0	"						
9Cl-PF3ONS	U			10.0	"						
perfluoro-1-nonanesulfonate (PFNS)	U	J		10.0	"						



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Batch B22C009 - *** DEFAULT PREP ***

Blank (B22C009-BLK1)

Prepared & Analyzed: Mar-09-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
11Cl-PF3OUdS	U			10.0	ng/L						
N-MeFOSAA	U			10.0	"						
N-EtFOSAA	U			10.0	"						
NFDHA	U			10.0	"						
perfluoro-1-decanesulfonate (PFDS)	U	J		10.0	"						
PFEESA	U			10.0	"						
PFMPA	U			10.0	"						
PFMBA	U			10.0	"						
3:3 FTCA	U			10.0	"						
5:3 FTCA	U			10.0	"						
7:3 FTCA	U			10.0	"						
FHUEA	U			10.0	"						
FOUEA	U			10.0	"						
HQ-115	U			10.0	"						
PFPrA	U			50.0	"						
PFDoS	U			10.0	"						
Surrogate: D-N-EtFOSA	140				"	160.0		87.3%	70-130		
Surrogate: D-N-MEFOSA	140				"	160.0		87.3%	70-130		
Surrogate: D7-N-MeFOSE	139				"	160.0		87.0%	70-130		
Surrogate: D9-N-EtFOSE	138				"	160.0		86.3%	70-130		
Surrogate: MHFPO-DA	146				"	160.0		91.4%	70-130		
Surrogate: MPFBA	126				"	160.0		78.8%	70-130		
Surrogate: M5PFHxA	109	Q			"	160.0		68.0%	70-130		
Surrogate: M3PFHxS	107				"	151.4		70.4%	70-130		
Surrogate: M8PFOA	110	Q			"	160.0		68.9%	70-130		
Surrogate: M9PFNA	109	Q			"	160.0		68.0%	70-130		
Surrogate: M8PFOS	103	Q			"	153.1		67.0%	70-130		
Surrogate: M6PFDA	109	Q			"	160.0		67.8%	70-130		
Surrogate: M7PFUnA	108	Q			"	160.0		67.4%	70-130		
Surrogate: MPFDoA	107	Q			"	160.0		66.6%	70-130		
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	95.6	Q			"	149.6		63.9%	70-130		
Surrogate: perfluoro- (1,2-13C2)octanesulfonateC13(2)-6:2 FTS	101	Q			"	151.8		66.2%	70-130		



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Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
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Batch B22C009 - *** DEFAULT PREP ***

Blank (B22C009-BLK1)

Prepared & Analyzed: Mar-09-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Surrogate: perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	104	Q			ng/L	153.3		67.8%	70-130		
Surrogate: D5-N-EtFOSAA	116				"	160.0		72.5%	70-130		
Surrogate: D3-N-MeFOSAA	113				"	160.0		70.6%	70-130		
Surrogate: M3PFBS	101	Q			"	148.6		67.9%	70-130		
Surrogate: M5PFPeA	113				"	160.0		70.7%	70-130		
Surrogate: M4PFHpA	109	Q			"	160.0		68.4%	70-130		
Surrogate: M2PFTreA	93.2	Q			"	160.0		58.3%	64.4-130		
Surrogate: M8PFOSA	112	Q			"	160.0		69.7%	70-130		

Blank (B22C009-BLK2)

Prepared & Analyzed: Mar-09-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorotridecanoate	U			10.0	ng/L						
perfluorododecanoate	U			10.0	"						
perfluoroundecanoate	U			10.0	"						
perfluorodecanoate	U			10.0	"						
perfluorooctyl sulfonate	17.7	Q		10.0	"						
perfluorononanoate	U			10.0	"						
perfluorooctanoate	U			10.0	"						
perfluorohexyl sulfonate	U			10.0	"						
perfluoroheptanoate	U			40.0	"						
perfluorohexanoate	U			10.0	"						
perfluorobutyl sulfonate	U			10.0	"						
perfluoropentanoate	U			50.0	"						
perfluorobutanoate	U			50.0	"						
perfluorotetradecanoate	U			10.0	"						
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U			10.0	"						
NMeFOSA	U			10.0	"						
NEtFOSA	U			10.0	"						
perfluoro-1-pentanesulfonate (PFPeS)	U			10.0	"						
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U			10.0	"						



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Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
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Analysis by LC MS MS - Quality Control US EPA Region 5 LSASD Analytical Services Branch

Batch B22C009 - *** DEFAULT PREP ***

Blank (B22C009-BLK2)

Prepared & Analyzed: Mar-09-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
NMeFOSE	U			10.0	ng/L						
NEtFOSE	U			10.0	"						
perfluoro-1-heptanesulfonate (PFHpS)	U			10.0	"						
HFPO-DA	U			10.0	"						
perfluoro-1-octanesulfonamide (FOSA)	U			10.0	"						
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U			10.0	"						
ADONA	U			10.0	"						
9Cl-PF3ONS	U			10.0	"						
perfluoro-1-nonanesulfonate (PFNS)	U			10.0	"						
11Cl-PF3OUdS	U			10.0	"						
N-MeFOSAA	U			10.0	"						
N-EtFOSAA	U			10.0	"						
NFDHA	U			10.0	"						
perfluoro-1-decanesulfonate (PFDS)	U			10.0	"						
PFEESA	U			10.0	"						
PFMPA	U			10.0	"						
PFMBA	U			10.0	"						
3:3 FTCA	U			10.0	"						
5:3 FTCA	U			10.0	"						
7:3 FTCA	U			10.0	"						
FHUEA	U			10.0	"						
FOUEA	U			10.0	"						
HQ-115	U			10.0	"						
PFPrA	U			50.0	"						
PFDoS	U			10.0	"						
Surrogate: D-N-EtFOSA	148				"	160.0		92.3%	70-130		
Surrogate: D-N-MEFOSA	154				"	160.0		96.1%	70-130		
Surrogate: D7-N-MeFOSE	140				"	160.0		87.5%	70-130		
Surrogate: D9-N-EtFOSE	138				"	160.0		86.3%	70-130		
Surrogate: MHFPO-DA	154				"	160.0		96.0%	70-130		
Surrogate: MPFBA	152				"	160.0		95.2%	70-130		



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Batch B22C009 - *** DEFAULT PREP ***

Blank (B22C009-BLK2)

Prepared & Analyzed: Mar-09-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Surrogate: M5PFHxA	132				ng/L	160.0		82.8%	70-130		
Surrogate: M3PFHxS	127				"	151.4		84.1%	70-130		
Surrogate: M8PFOA	132				"	160.0		82.8%	70-130		
Surrogate: M9PFNA	136				"	160.0		84.8%	70-130		
Surrogate: M8PFOS	126				"	153.1		82.3%	70-130		
Surrogate: M6PFDA	133				"	160.0		83.2%	70-130		
Surrogate: M7PFUnA	134				"	160.0		83.8%	70-130		
Surrogate: MPFDoA	136				"	160.0		84.9%	70-130		
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	121				"	149.6		80.9%	70-130		
Surrogate: perfluoro- (1,2-13C2)octanesulfonateC13(2)-6:2 FTS	118				"	151.8		77.9%	70-130		
Surrogate: perfluoro- (1,2-13C2)decanesulfonateC13(2)-8:2 FTS	125				"	153.3		81.2%	70-130		
Surrogate: D5-N-EtFOSAA	143				"	160.0		89.3%	70-130		
Surrogate: D3-N-MeFOSAA	136				"	160.0		85.3%	70-130		
Surrogate: M3PFBS	123				"	148.6		83.0%	70-130		
Surrogate: M5PFPeA	137				"	160.0		85.8%	70-130		
Surrogate: M4PFHpA	133				"	160.0		83.1%	70-130		
Surrogate: M2PFTreA	141				"	160.0		88.2%	64.4-130		
Surrogate: M8PFOSA	135				"	160.0		84.2%	70-130		

LCS (B22C009-BS1)

Prepared & Analyzed: Mar-09-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorotridecanoate	113			10.0	ng/L	160.0		70.7%	70-130		
perfluorododecanoate	111	Q		10.0	"	160.0		69.7%	70-130		
perfluoroundecanoate	109	Q		10.0	"	160.0		68.0%	70-130		
perfluorodecanoate	108	Q		10.0	"	160.0		67.3%	70-130		
perfluorooctyl sulfonate	108	Q		10.0	"	160.0		67.4%	70-130		
perfluorononanoate	109	Q		10.0	"	160.0		68.2%	70-130		
perfluorooctanoate	109	Q		10.0	"	160.0		67.9%	70-130		
perfluorohexyl sulfonate	106	Q		10.0	"	160.0		66.4%	70-130		
perfluoroheptanoate	108	Q		40.0	"	160.0		67.3%	70-130		
perfluorohexanoate	107	Q		10.0	"	160.0		67.0%	70-130		



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Analysis by LC MS MS - Quality Control

US EPA Region 5 LSASD Analytical Services Branch

Batch B22C009 - *** DEFAULT PREP ***

LCS (B22C009-BS1)

Prepared & Analyzed: Mar-09-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorobutyl sulfonate	107	Q		10.0	ng/L	160.0		67.1%	70-130		
perfluoropentanoate	553	Q		50.0	"	800.0		69.2%	70-130		
perfluorobutanoate	606			50.0	"	800.0		75.7%	70-130		
perfluorotetradecanoate	117			10.0	"	160.0		72.9%	65.8-130		
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	139			10.0	"	160.0		87.0%	70-130		
NMeFOSA	140			10.0	"	160.0		87.5%	70-130		
NEtFOSA	137			10.0	"	160.0		85.3%	70-130		
perfluoro-1-pentanesulfonate (PFPeS)	146			10.0	"	160.0		91.2%	70-130		
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	141			10.0	"	160.0		88.1%	70-130		
NMeFOSE	134			10.0	"	160.0		83.9%	70-130		
NEtFOSE	127			10.0	"	160.0		79.4%	70-130		
perfluoro-1-heptanesulfonate (PFHpS)	141			10.0	"	160.0		88.1%	70-130		
HFPO-DA	140			10.0	"	160.0		87.5%	70-130		
perfluoro-1-octanesulfonamide (FOSA)	143			10.0	"	160.0		89.3%	70-130		
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	145			10.0	"	160.0		90.7%	70-130		
ADONA	142			10.0	"	160.0		88.6%	70-130		
9Cl-PF3ONS	141			10.0	"	160.0		88.1%	70-130		
perfluoro-1-nonanesulfonate (PFNS)	141			10.0	"	160.0		88.4%	70-130		
11Cl-PF3OUdS	144			10.0	"	160.0		90.3%	70-130		
N-MeFOSAA	145			10.0	"	160.0		90.5%	70-130		
N-EtFOSAA	165			10.0	"	160.0		103%	70-130		
NFDHA	144			10.0	"	160.0		89.8%	70-130		
perfluoro-1-decanesulfonate (PFDS)	144			10.0	"	160.0		90.2%	70-130		
PFEESA	142			10.0	"	160.0		88.9%	70-130		
PFMPA	156			10.0	"	160.0		97.8%	70-130		
PFMBA	141			10.0	"	160.0		88.3%	70-130		
3:3 FTCA	139			10.0	"	160.0		86.9%	70-130		
5:3 FTCA	144			10.0	"	160.0		89.9%	70-130		
7:3 FTCA	142			10.0	"	160.0		89.0%	70-130		



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Batch B22C009 - *** DEFAULT PREP ***

LCS (B22C009-BS1)

Prepared & Analyzed: Mar-09-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
FHUEA	145			10.0	ng/L	160.0		90.9%	70-130		
FOUEA	144			10.0	"	160.0		90.1%	70-130		
HQ-115	162			10.0	"	160.0		102%	70-130		
PFPPrA	924			50.0	"	800.0		116%	70-142		
PFDoS	141			10.0	"	160.0		88.2%	69.7-130		
Surrogate: D-N-EtFOSA	151				"	160.0		94.4%	70-130		
Surrogate: D-N-MEFOSA	151				"	160.0		94.4%	70-130		
Surrogate: D7-N-MeFOSE	149				"	160.0		93.0%	70-130		
Surrogate: D9-N-EtFOSE	142				"	160.0		88.5%	70-130		
Surrogate: MHFPO-DA	156				"	160.0		97.7%	70-130		
Surrogate: MPFBA	183				"	160.0		114%	70-130		
Surrogate: M5PFHxA	159				"	160.0		99.1%	70-130		
Surrogate: M3PFHxS	149				"	151.4		98.2%	70-130		
Surrogate: M8PFOA	159				"	160.0		99.3%	70-130		
Surrogate: M9PFNA	162				"	160.0		101%	70-130		
Surrogate: M8PFOS	153				"	153.1		100%	70-130		
Surrogate: M6PFDA	159				"	160.0		99.2%	70-130		
Surrogate: M7PFUnA	157				"	160.0		98.2%	70-130		
Surrogate: MPFDoA	162				"	160.0		101%	70-130		
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	149				"	149.6		99.6%	70-130		
Surrogate: perfluoro- (1,2-13C2)octanesulfonateC13(2)-6:2 FTS	149				"	151.8		98.0%	70-130		
Surrogate: perfluoro- (1,2-13C2)decanesulfonateC13(2)-8:2 FTS	155				"	153.3		101%	70-130		
Surrogate: D5-N-EtFOSAA	174				"	160.0		109%	70-130		
Surrogate: D3-N-MeFOSAA	161				"	160.0		101%	70-130		
Surrogate: M3PFBS	148				"	148.6		99.3%	70-130		
Surrogate: M5PFPeA	164				"	160.0		103%	70-130		
Surrogate: M4PFHpA	159				"	160.0		99.3%	70-130		
Surrogate: M2PFTreA	167				"	160.0		104%	64.4-130		
Surrogate: M8PFOSA	158				"	160.0		98.7%	70-130		



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US EPA Region 5 LSASD Analytical Services Branch

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60604

Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

Analysis by LC MS MS - Quality Control US EPA Region 5 LSASD Analytical Services Branch

Batch B22C009 - *** DEFAULT PREP ***

LCS Dup (B22C009-BSD1)

Prepared & Analyzed: Mar-09-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
perfluorotridecanoate	157	Q		10.0	ng/L	160.0		97.8%	70-130	32.2
perfluorododecanoate	153	Q		10.0	"	160.0		95.6%	70-130	31.3
perfluoroundecanoate	154	Q		10.0	"	160.0		96.1%	70-130	34.3
perfluorodecanoate	152	Q		10.0	"	160.0		95.3%	70-130	34.4
perfluorooctyl sulfonate	157	Q		10.0	"	160.0		98.4%	70-130	37.4
perfluorononanoate	153	Q		10.0	"	160.0		95.8%	70-130	33.7
perfluorooctanoate	152	Q		10.0	"	160.0		95.1%	70-130	33.3
perfluorohexyl sulfonate	153	Q		10.0	"	160.0		95.7%	70-130	36.1
perfluoroheptanoate	152	Q		40.0	"	160.0		95.0%	70-130	34.1
perfluorohexanoate	151	Q		10.0	"	160.0		94.1%	70-130	33.6
perfluorobutyl sulfonate	153	Q		10.0	"	160.0		95.5%	70-130	34.9
perfluoropentanoate	781	Q		50.0	"	800.0		97.6%	70-130	34.1
perfluorobutanoate	881	Q		50.0	"	800.0		110%	70-130	37.0
perfluorotetradecanoate	161	Q		10.0	"	160.0		101%	65.8-130	32.1
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	147			10.0	"	160.0		91.6%	70-130	5.20
NMeFOSA	150			10.0	"	160.0		93.5%	70-130	6.57
NEtFOSA	147			10.0	"	160.0		92.1%	70-130	7.58
perfluoro-1-pentanesulfonate (PFPeS)	146			10.0	"	160.0		91.0%	70-130	0.193
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	146			10.0	"	160.0		91.3%	70-130	3.52
NMeFOSE	144			10.0	"	160.0		89.7%	70-130	6.71
NEtFOSE	136			10.0	"	160.0		85.1%	70-130	7.00
perfluoro-1-heptanesulfonate (PFHpS)	146			10.0	"	160.0		91.3%	70-130	3.60
HFPO-DA	150			10.0	"	160.0		93.5%	70-130	6.64
perfluoro-1-octanesulfonamide (FOSA)	144			10.0	"	160.0		90.2%	70-130	0.907
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	148			10.0	"	160.0		92.7%	70-130	2.18
ADONA	152			10.0	"	160.0		95.1%	70-130	7.03
9Cl-PF3ONS	150			10.0	"	160.0		94.1%	70-130	6.55
perfluoro-1-nonanesulfonate (PFNS)	144			10.0	"	160.0		89.8%	70-130	1.61
11Cl-PF3OUdS	153			10.0	"	160.0		95.6%	70-130	5.79



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Prepared & Analyzed: Mar-09-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
N-MeFOSAA	151			10.0	ng/L	160.0		94.1%	70-130	3.84	30
N-EtFOSAA	173			10.0	"	160.0		108%	70-130	4.76	30
NFDHA	151			10.0	"	160.0		94.6%	70-130	5.17	30
perfluoro-1-decanesulfonate (PFDS)	149			10.0	"	160.0		93.4%	70-130	3.47	30
PFEESA	153			10.0	"	160.0		95.6%	70-130	7.26	30
PFMPA	167			10.0	"	160.0		104%	70-130	6.26	30
PFMBA	155			10.0	"	160.0		96.8%	70-130	9.19	30
3:3 FTCA	144			10.0	"	160.0		89.9%	70-130	3.41	30
5:3 FTCA	151			10.0	"	160.0		94.1%	70-130	4.63	30
7:3 FTCA	155			10.0	"	160.0		97.1%	70-130	8.73	30
FHUEA	154			10.0	"	160.0		96.2%	70-130	5.70	30
FOUEA	154			10.0	"	160.0		96.1%	70-130	6.42	30
HQ-115	175			10.0	"	160.0		109%	70-130	7.43	30
PFPrA	1000			50.0	"	800.0		126%	70-142	8.33	30
PFDoS	149			10.0	"	160.0		93.1%	69.7-130	5.46	30
Surrogate: D-N-EtFOSA	137				"	160.0		85.6%	70-130		
Surrogate: D-N-MeFOSA	140				"	160.0		87.7%	70-130		
Surrogate: D7-N-MeFOSE	139				"	160.0		86.7%	70-130		
Surrogate: D9-N-EtFOSE	135				"	160.0		84.2%	70-130		
Surrogate: MHFPO-DA	146				"	160.0		91.5%	70-130		
Surrogate: MPFBA	172				"	160.0		107%	70-130		
Surrogate: M5PFHxA	146				"	160.0		91.5%	70-130		
Surrogate: M3PFHxS	138				"	151.4		91.5%	70-130		
Surrogate: M8PFOA	146				"	160.0		91.0%	70-130		
Surrogate: M9PFNA	148				"	160.0		92.2%	70-130		
Surrogate: M8PFOS	142				"	153.1		92.8%	70-130		
Surrogate: M6PFDA	147				"	160.0		91.6%	70-130		
Surrogate: M7PFUnA	150				"	160.0		93.5%	70-130		
Surrogate: MPFDoA	149				"	160.0		93.3%	70-130		
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	135				"	149.6		90.4%	70-130		
Surrogate: perfluoro- (1,2-13C2)octanesulfonateC13(2)-6:2 FTS	137				"	151.8		90.2%	70-130		
Surrogate: perfluoro- (1,2-13C2)decanesulfonateC13(2)-8:2 FTS	141				"	153.3		91.9%	70-130		



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LCS Dup (B22C009-BSD1)

Prepared & Analyzed: Mar-09-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Surrogate: D5-N-EtFOSAA	161				ng/L	160.0		101%	70-130		
Surrogate: D3-N-MeFOSAA	148				"	160.0		92.5%	70-130		
Surrogate: M3PFBS	135				"	148.6		90.8%	70-130		
Surrogate: M5PFPeA	151				"	160.0		94.4%	70-130		
Surrogate: M4PFHpA	149				"	160.0		92.9%	70-130		
Surrogate: M2PFTreA	157				"	160.0		98.1%	64.4-130		
Surrogate: M8PFOSA	146				"	160.0		91.5%	70-130		

Duplicate (B22C009-DUP1)

Source: 2202010-08

Prepared: Mar-09-22 Analyzed: Mar-10-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorotridecanoate	2.02	Q		10.1	ng/L		4.65			78.8	30
perfluorododecanoate	1.98	Q		10.1	"		3.16			46.0	30
perfluoroundecanoate	1.78	Q		10.1	"		6.50			114	30
perfluorodecanoate	2.07	Q		10.1	"		9.47			128	30
perfluorooctyl sulfonate	6.94	Q		10.1	"		14.3			69.2	30
perfluorononanoate	2.67			10.1	"		2.58			3.11	30
perfluorooctanoate	6.72			10.1	"		6.99			3.93	30
perfluorohexyl sulfonate	4.42			10.1	"		5.43			20.6	30
perfluoroheptanoate	3.46			40.6	"		3.82			9.93	30
perfluorohexanoate	9.90			10.1	"		12.6			23.9	30
perfluorobutyl sulfonate	17.0			10.1	"		17.9			5.19	30
perfluoropentanoate	59.6			50.7	"		59.3			0.585	30
perfluorobutanoate	634			50.7	"		634			0.0292	30
perfluorotetradecanoate	2.65	Q		10.1	"		4.73			56.5	30
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U			10.1	"		U				30
NMeFOSA	U			10.1	"		U				30
NEtFOSA	U			10.1	"		U				30
perfluoro-1-pentanesulfonate (PFPeS)	2.39			10.1	"		2.52			5.30	30
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U			10.1	"		1.02				30
NMeFOSE	U			10.1	"		U				30



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Duplicate (B22C009-DUP1)		Source: 2202010-08		Prepared: Mar-09-22 Analyzed: Mar-10-22							
Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
NEtFOSE	U			10.1	ng/L		1.65				30
perfluoro-1-heptanesulfonate (PFHpS)	1.10			10.1	"		1.20			9.08	30
HFPO-DA	4.24			10.1	"		4.38			3.16	30
perfluoro-1-octanesulfonamide (FOSA)	0.997			10.1	"		0.954			4.37	30
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U			10.1	"		U				30
ADONA	U			10.1	"		U				30
9Cl-PF3ONS	U			10.1	"		U				30
perfluoro-1-nonanesulfonate (PFNS)	U			10.1	"		U				30
11Cl-PF3OUdS	U			10.1	"		U				30
N-MeFOSAA	U			10.1	"		U				30
N-EtFOSAA	U			10.1	"		U				30
NFDHA	U			10.1	"		U				30
perfluoro-1-decanesulfonate (PFDS)	U			10.1	"		U				30
PFEESA	0.737	Q		10.1	"		1.84			85.7	30
PFMPA	16.7			10.1	"		16.1			3.29	30
PFMBA	6.33			10.1	"		6.17			2.58	30
3:3 FTCA	U			10.1	"		U				30
5:3 FTCA	U			10.1	"		U				30
7:3 FTCA	U			10.1	"		U				30
FHUEA	U			10.1	"		U				30
FOUEA	1.48			10.1	"		U				30
HQ-115	24.8			10.1	"		25.7			3.88	30
PFPrA	1850			101	"		1850			0.195	30
PFDoS	U			10.1	"		U				30
Surrogate: D-N-EtFOSA	137				"	164.5		83.5%	70-130		
Surrogate: D-N-MeFOSA	145				"	164.5		88.2%	70-130		
Surrogate: D7-N-MeFOSE	145				"	164.5		88.4%	70-130		
Surrogate: D9-N-EtFOSE	138				"	164.5		83.8%	70-130		
Surrogate: MHFPO-DA	150				"	164.5		91.5%	70-130		
Surrogate: MPFBA	176				"	164.5		107%	70-130		
Surrogate: MSPFHxA	148				"	164.5		89.8%	70-130		



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Batch B22C009 - *** DEFAULT PREP ***

Duplicate (B22C009-DUP1)		Source: 2202010-08		Prepared: Mar-09-22 Analyzed: Mar-10-22							
Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Surrogate: M3PFHxS	141				ng/L	155.6		90.4%	70-130		
Surrogate: M8PFOA	147				"	164.5		89.1%	70-130		
Surrogate: M9PFNA	148				"	164.5		89.8%	70-130		
Surrogate: M8PFOS	139				"	157.4		88.2%	70-130		
Surrogate: M6PFDA	148				"	164.5		89.8%	70-130		
Surrogate: M7PFUnA	146				"	164.5		88.8%	70-130		
Surrogate: MPFDoA	146				"	164.5		88.8%	70-130		
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	121				"	153.8		78.5%	70-130		
Surrogate: perfluoro- (1,2-13C2)octanesulfonateC13(2)-6:2 FTS	125				"	156.1		80.3%	70-130		
Surrogate: perfluoro- (1,2-13C2)decanesulfonateC13(2)-8:2 FTS	133				"	157.6		84.5%	70-130		
Surrogate: D5-N-EtFOSAA	155				"	164.5		94.4%	70-130		
Surrogate: D3-N-MeFOSAA	140				"	164.5		85.4%	70-130		
Surrogate: M3PFBS	139				"	152.8		91.2%	70-130		
Surrogate: M5PFPeA	158				"	164.5		96.1%	70-130		
Surrogate: M4PFHpA	148				"	164.5		90.1%	70-130		
Surrogate: M2PFTreA	139				"	164.5		84.5%	64.4-130		
Surrogate: M8PFOSA	148				"	164.5		90.2%	70-130		

MRL Check (B22C009-MRL1)

		Prepared & Analyzed: Mar-09-22									
Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorotridecanoate	11.0			10.0	ng/L	10.00		110%	50-150		
perfluorododecanoate	11.0			10.0	"	10.00		110%	50-150		
perfluoroundecanoate	11.3			10.0	"	10.00		113%	50-150		
perfluorodecanoate	11.0			10.0	"	10.00		110%	50-150		
perfluorooctyl sulfonate	13.8			10.0	"	10.00		138%	50-150		
perfluorononanoate	10.4			10.0	"	10.00		104%	50-150		
perfluorooctanoate	11.5			10.0	"	10.00		115%	50-150		
perfluorohexyl sulfonate	9.84			10.0	"	10.00		98.4%	50-150		
perfluoroheptanoate	10.0			40.0	"	10.00		100%	50-150		
perfluorohexanoate	9.32			10.0	"	10.00		93.2%	50-150		
perfluorobutyl sulfonate	12.7			10.0	"	10.00		127%	50-150		



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MRL Check (B22C009-MRL1)

Prepared & Analyzed: Mar-09-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluoropentanoate	45.4			50.0	ng/L	50.00		90.8%	50-150		
perfluorobutanoate	52.8			50.0	"	50.00		106%	50-150		
perfluorotetradecanoate	12.4			10.0	"	10.00		124%	50-150		
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	8.48			10.0	"	10.00		84.8%	50-150		
NMeFOSA	8.75			10.0	"	10.00		87.5%	50-150		
NEtFOSA	8.61			10.0	"	10.00		86.1%	50-150		
perfluoro-1-pentanesulfonate (PFPeS)	9.14			10.0	"	10.00		91.4%	50-150		
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	8.75			10.0	"	10.00		87.5%	50-150		
NMeFOSE	8.24			10.0	"	10.00		82.4%	50-150		
NEtFOSE	7.80			10.0	"	10.00		78.0%	50-150		
perfluoro-1-heptanesulfonate (PFHpS)	8.86			10.0	"	10.00		88.6%	50-150		
HFPO-DA	9.98			10.0	"	10.00		99.8%	50-150		
perfluoro-1-octanesulfonamide (FOSA)	8.95			10.0	"	10.00		89.5%	50-150		
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	8.69			10.0	"	10.00		86.9%	50-150		
ADONA	8.82			10.0	"	10.00		88.2%	50-150		
9Cl-PF3ONS	8.99			10.0	"	10.00		89.9%	50-150		
perfluoro-1-nonanesulfonate (PFNS)	8.66			10.0	"	10.00		86.6%	50-150		
11Cl-PF3OUdS	8.80			10.0	"	10.00		88.0%	50-150		
N-MeFOSAA	9.27			10.0	"	10.00		92.7%	50-150		
N-EtFOSAA	10.8			10.0	"	10.00		108%	50-150		
NFDHA	8.81			10.0	"	10.00		88.1%	50-150		
perfluoro-1-decanesulfonate (PFDS)	8.67			10.0	"	10.00		86.7%	50-150		
PFEESA	8.53			10.0	"	10.00		85.3%	50-150		
PFMPA	9.43			10.0	"	10.00		94.3%	50-150		
PFMBA	9.72			10.0	"	10.00		97.2%	50-150		
3:3 FTCA	8.49	I		10.0	"	10.00		84.9%	50-150		
5:3 FTCA	9.21			10.0	"	10.00		92.1%	50-150		
7:3 FTCA	9.73			10.0	"	10.00		97.3%	50-150		
FHUEA	8.71			10.0	"	10.00		87.1%	50-150		



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MRL Check (B22C009-MRL1)

Prepared & Analyzed: Mar-09-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
FOUEA	9.70			10.0	ng/L	10.00		97.0%	50-150		
HQ-115	11.4			10.0	"	10.00		114%	50-150		
PFPPrA	63.3			50.0	"	50.00		127%	50-150		
PFDoS	8.13			10.0	"	10.00		81.3%	50-150		
Surrogate: D-N-EtFOSA	154				"	160.0		95.9%	70-130		
Surrogate: D-N-MeFOSA	151				"	160.0		94.6%	70-130		
Surrogate: D7-N-MeFOSE	152				"	160.0		94.9%	70-130		
Surrogate: D9-N-EtFOSE	147				"	160.0		92.2%	70-130		
Surrogate: MHFPO-DA	156				"	160.0		97.6%	70-130		
Surrogate: MPFBA	180				"	160.0		112%	70-130		
Surrogate: M5PFHxA	152				"	160.0		95.1%	70-130		
Surrogate: M3PFHxS	146				"	151.4		96.6%	70-130		
Surrogate: M8PFOA	154				"	160.0		96.0%	70-130		
Surrogate: M9PFNA	155				"	160.0		97.1%	70-130		
Surrogate: M8PFOS	144				"	153.1		94.3%	70-130		
Surrogate: M6PFDA	151				"	160.0		94.6%	70-130		
Surrogate: M7PFUnA	152				"	160.0		95.2%	70-130		
Surrogate: MPFDoA	153				"	160.0		95.8%	70-130		
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	135				"	149.6		90.1%	70-130		
Surrogate: perfluoro- (1,2-13C2)octanesulfonateC13(2)-6:2 FTS	140				"	151.8		92.0%	70-130		
Surrogate: perfluoro- (1,2-13C2)decanesulfonateC13(2)-8:2 FTS	139				"	153.3		90.9%	70-130		
Surrogate: D5-N-EtFOSAA	166				"	160.0		104%	70-130		
Surrogate: D3-N-MeFOSAA	154				"	160.0		96.3%	70-130		
Surrogate: M3PFBS	144				"	148.6		96.6%	70-130		
Surrogate: M5PFPeA	161				"	160.0		100%	70-130		
Surrogate: M4PFHpA	152				"	160.0		95.1%	70-130		
Surrogate: M2PFTreA	159				"	160.0		99.4%	64.4-130		
Surrogate: M8PFOSA	152				"	160.0		95.0%	70-130		



Environmental Protection Agency Region 5

US EPA Region 5 LSASD Analytical Services Branch

536 South Clark Street, Chicago, IL 60605
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Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60604

Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

Analysis by LC MS MS - Quality Control US EPA Region 5 LSASD Analytical Services Branch

Batch B22C009 - *** DEFAULT PREP ***

MRL Check (B22C009-MRL2)

Prepared & Analyzed: Mar-09-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorotridecanoate	9.57			10.0	ng/L	10.00		95.7%	50-150		
perfluorododecanoate	9.05			10.0	"	10.00		90.5%	50-150		
perfluoroundecanoate	9.09			10.0	"	10.00		90.9%	50-150		
perfluorodecanoate	9.04			10.0	"	10.00		90.4%	50-150		
perfluorooctyl sulfonate	17.8	Q		10.0	"	10.00		178%	50-150		
perfluorononanoate	9.05			10.0	"	10.00		90.5%	50-150		
perfluorooctanoate	10.3			10.0	"	10.00		103%	50-150		
perfluorohexyl sulfonate	9.46			10.0	"	10.00		94.6%	50-150		
perfluoroheptanoate	8.53			40.0	"	10.00		85.3%	50-150		
perfluorohexanoate	8.55			10.0	"	10.00		85.5%	50-150		
perfluorobutyl sulfonate	11.4			10.0	"	10.00		114%	50-150		
perfluoropentanoate	41.4			50.0	"	50.00		82.8%	50-150		
perfluorobutanoate	50.3			50.0	"	50.00		101%	50-150		
perfluorotetradecanoate	10.4			10.0	"	10.00		104%	50-150		
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	6.98			10.0	"	10.00		69.8%	50-150		
NMeFOSA	7.54			10.0	"	10.00		75.4%	50-150		
NEtFOSA	8.37			10.0	"	10.00		83.7%	50-150		
perfluoro-1-pentanesulfonate (PFPeS)	8.93			10.0	"	10.00		89.3%	50-150		
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	8.17			10.0	"	10.00		81.7%	50-150		
NMeFOSE	8.34			10.0	"	10.00		83.4%	50-150		
NEtFOSE	6.10			10.0	"	10.00		61.0%	50-150		
perfluoro-1-heptanesulfonate (PFHpS)	7.78			10.0	"	10.00		77.8%	50-150		
HFPO-DA	9.01			10.0	"	10.00		90.1%	50-150		
perfluoro-1-octanesulfonamide (FOSA)	8.01			10.0	"	10.00		80.1%	50-150		
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	7.87			10.0	"	10.00		78.7%	50-150		
ADONA	8.03			10.0	"	10.00		80.3%	50-150		
9Cl-PF3ONS	7.95			10.0	"	10.00		79.5%	50-150		
perfluoro-1-nonanesulfonate (PFNS)	7.66			10.0	"	10.00		76.6%	50-150		
11Cl-PF3OUdS	8.18			10.0	"	10.00		81.8%	50-150		



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Batch B22C009 - *** DEFAULT PREP ***

MRL Check (B22C009-MRL2)

Prepared & Analyzed: Mar-09-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
N-MeFOSAA	8.25			10.0	ng/L	10.00		82.5%	50-150		
N-EtFOSAA	8.69			10.0	"	10.00		86.9%	50-150		
NFDHA	7.92			10.0	"	10.00		79.2%	50-150		
perfluoro-1-decanesulfonate (PFDS)	8.02			10.0	"	10.00		80.2%	50-150		
PFEESA	8.30			10.0	"	10.00		83.0%	50-150		
PFMPA	8.37			10.0	"	10.00		83.7%	50-150		
PFMBA	8.96			10.0	"	10.00		89.6%	50-150		
3:3 FTCA	8.10			10.0	"	10.00		81.0%	50-150		
5:3 FTCA	7.13			10.0	"	10.00		71.3%	50-150		
7:3 FTCA	8.05			10.0	"	10.00		80.5%	50-150		
FHUEA	7.70			10.0	"	10.00		77.0%	50-150		
FOUEA	8.74			10.0	"	10.00		87.4%	50-150		
HQ-115	9.20			10.0	"	10.00		92.0%	50-150		
PFPrA	55.6			50.0	"	50.00		111%	50-150		
PFDoS	7.78			10.0	"	10.00		77.8%	50-150		
Surrogate: D-N-EtFOSA	154				"	160.0		96.3%	70-130		
Surrogate: D-N-MeFOSA	151				"	160.0		94.2%	70-130		
Surrogate: D7-N-MeFOSE	148				"	160.0		92.2%	70-130		
Surrogate: D9-N-EtFOSE	141				"	160.0		88.4%	70-130		
Surrogate: MHFPO-DA	154				"	160.0		96.4%	70-130		
Surrogate: MPFBA	174				"	160.0		108%	70-130		
Surrogate: M5PFHxA	148				"	160.0		92.6%	70-130		
Surrogate: M3PFHxS	142				"	151.4		93.8%	70-130		
Surrogate: M8PFOA	148				"	160.0		92.7%	70-130		
Surrogate: M9PFNA	150				"	160.0		94.0%	70-130		
Surrogate: M8PFOS	142				"	153.1		92.8%	70-130		
Surrogate: M6PFDA	149				"	160.0		92.9%	70-130		
Surrogate: M7PFUnA	149				"	160.0		93.2%	70-130		
Surrogate: MPFDoA	153				"	160.0		95.4%	70-130		
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	130				"	149.6		86.7%	70-130		
Surrogate: perfluoro- (1,2-13C2)octanesulfonateC13(2)-6:2 FTS	134				"	151.8		88.4%	70-130		
Surrogate: perfluoro- (1,2-13C2)decanesulfonateC13(2)-8:2 FTS	136				"	153.3		88.6%	70-130		



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Project Manager: Jennifer Wilson

Reported:
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Analysis by LC MS MS - Quality Control US EPA Region 5 LSASD Analytical Services Branch

Batch B22C009 - *** DEFAULT PREP ***

MRL Check (B22C009-MRL2)

Prepared & Analyzed: Mar-09-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Surrogate: D5-N-EtFOSAA	161				ng/L	160.0		101%	70-130		
Surrogate: D3-N-MeFOSAA	151				"	160.0		94.2%	70-130		
Surrogate: M3PFBS	139				"	148.6		93.3%	70-130		
Surrogate: M5PFPeA	154				"	160.0		96.1%	70-130		
Surrogate: M4PFHpA	149				"	160.0		93.1%	70-130		
Surrogate: M2PFTreA	162				"	160.0		101%	64.4-130		
Surrogate: M8PFOSA	149				"	160.0		92.9%	70-130		

Matrix Spike (B22C009-MS1)

Source: 2202010-08

Prepared: Mar-09-22 Analyzed: Mar-10-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorotridecanoate	147			10.0	ng/L	160.4	4.65	89.0%	70-130		
perfluorododecanoate	144			10.0	"	160.4	3.16	88.1%	70-130		
perfluoroundecanoate	144			10.0	"	160.4	6.50	85.5%	70-130		
perfluorodecanoate	144			10.0	"	160.4	9.47	84.1%	70-130		
perfluorooctyl sulfonate	144			10.0	"	160.4	14.3	80.8%	70-130		
perfluorononanoate	147			10.0	"	160.4	2.58	89.8%	70-130		
perfluorooctanoate	149			10.0	"	160.4	6.99	88.7%	70-130		
perfluorohexyl sulfonate	149			10.0	"	160.4	5.43	89.5%	70-130		
perfluoroheptanoate	147			40.1	"	160.4	3.82	89.1%	70-130		
perfluorohexanoate	153			10.0	"	160.4	12.6	87.5%	70-130		
perfluorobutyl sulfonate	163			10.0	"	160.4	17.9	90.7%	70-130		
perfluoropentanoate	812			50.1	"	802.1	59.3	93.9%	70-130		
perfluorobutanoate	1500			50.1	"	802.1	634	108%	70-130		
perfluorotetradecanoate	141			10.0	"	160.4	4.73	84.7%	65.8-130		
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	130			10.0	"	160.4	U	81.3%	70-130		
NMeFOSA	136			10.0	"	160.4	U	84.5%	70-130		
NEtFOSA	131			10.0	"	160.4	U	81.9%	70-130		
perfluoro-1-pentanesulfonate (PFPeS)	140			10.0	"	160.4	2.52	85.6%	70-130		
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	129			10.0	"	160.4	1.02	79.8%	70-130		
NMeFOSE	133			10.0	"	160.4	U	82.8%	70-130		



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Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

Analysis by LC MS MS - Quality Control US EPA Region 5 LSASD Analytical Services Branch

Batch B22C009 - *** DEFAULT PREP ***

Matrix Spike (B22C009-MS1)

Source: 2202010-08

Prepared: Mar-09-22 Analyzed: Mar-10-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
NEtFOSE	125			10.0	ng/L	160.4	1.65	76.7%	70-130		
perfluoro-1-heptanesulfonate (PFHpS)	139			10.0	"	160.4	1.20	85.6%	70-130		
HFPO-DA	146			10.0	"	160.4	4.38	88.2%	70-130		
perfluoro-1-octanesulfonamide (FOSA)	141			10.0	"	160.4	0.954	87.1%	70-130		
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	136			10.0	"	160.4	U	84.6%	70-130		
ADONA	146			10.0	"	160.4	U	91.1%	70-130		
9Cl-PF3ONS	143			10.0	"	160.4	U	89.0%	70-130		
perfluoro-1-nonanesulfonate (PFNS)	146			10.0	"	160.4	U	90.9%	70-130		
11Cl-PF3OUdS	142			10.0	"	160.4	U	88.3%	70-130		
N-MeFOSAA	137			10.0	"	160.4	U	85.3%	70-130		
N-EtFOSAA	147			10.0	"	160.4	U	91.6%	70-130		
NFDHA	149			10.0	"	160.4	U	92.9%	70-130		
perfluoro-1-decanesulfonate (PFDS)	138			10.0	"	160.4	U	85.8%	70-130		
PFEESA	146			10.0	"	160.4	1.84	90.0%	70-130		
PFMPA	181			10.0	"	160.4	16.1	103%	70-130		
PFMBA	155			10.0	"	160.4	6.17	93.0%	70-130		
3:3 FTCA	139			10.0	"	160.4	U	86.6%	70-130		
5:3 FTCA	148			10.0	"	160.4	U	92.3%	70-130		
7:3 FTCA	145			10.0	"	160.4	U	90.1%	70-130		
FHUEA	151			10.0	"	160.4	U	94.1%	70-130		
FOUEA	147			10.0	"	160.4	U	91.4%	70-130		
HQ-115	205			10.0	"	160.4	25.7	112%	70-130		
PFPrA	2680			100	"	802.1	1850	103%	70-142		
PFDoS	133			10.0	"	160.4	U	83.0%	69.7-130		
Surrogate: D-N-EtFOSA	121				"	160.4		75.1%	70-130		
Surrogate: D-N-MeFOSA	125				"	160.4		77.6%	70-130		
Surrogate: D7-N-MeFOSE	131				"	160.4		81.4%	70-130		
Surrogate: D9-N-EtFOSE	133				"	160.4		83.1%	70-130		
Surrogate: MHFPO-DA	143				"	160.4		89.4%	70-130		
Surrogate: MPFBA	169				"	160.4		105%	70-130		
Surrogate: MSPFHxA	143				"	160.4		89.0%	70-130		



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Batch B22C009 - *** DEFAULT PREP ***

Matrix Spike (B22C009-MS1)			Source: 2202010-08		Prepared: Mar-09-22 Analyzed: Mar-10-22						
Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Surrogate: M3PFHxS	134				ng/L	151.8		88.0%	70-130		
Surrogate: M8PFOA	142				"	160.4		88.5%	70-130		
Surrogate: M9PFNA	144				"	160.4		89.6%	70-130		
Surrogate: M8PFOS	132				"	153.5		85.7%	70-130		
Surrogate: M6PFDA	139				"	160.4		86.7%	70-130		
Surrogate: M7PFUnA	143				"	160.4		89.0%	70-130		
Surrogate: MPFDoA	141				"	160.4		88.2%	70-130		
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	121				"	150.0		80.6%	70-130		
Surrogate: perfluoro- (1,2-13C2)octanesulfonateC13(2)-6:2 FTS	129				"	152.2		84.5%	70-130		
Surrogate: perfluoro- (1,2-13C2)decanesulfonateC13(2)-8:2 FTS	132				"	153.7		85.9%	70-130		
Surrogate: D5-N-EtFOSAA	144				"	160.4		89.9%	70-130		
Surrogate: D3-N-MeFOSAA	138				"	160.4		85.7%	70-130		
Surrogate: M3PFBS	133				"	149.0		89.5%	70-130		
Surrogate: M5PFPeA	151				"	160.4		94.2%	70-130		
Surrogate: M4PFHpA	142				"	160.4		88.4%	70-130		
Surrogate: M2PFTreA	135				"	160.4		84.3%	64.4-130		
Surrogate: M8PFOSA	142				"	160.4		88.6%	70-130		

Matrix Spike Dup (B22C009-MSD1)			Source: 2202010-08		Prepared: Mar-09-22 Analyzed: Mar-10-22						
Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorotridecanoate	156			10.2	ng/L	165.4	4.65	91.3%	70-130	5.47	30
perfluorododecanoate	152			10.2	"	165.4	3.16	90.0%	70-130	5.03	30
perfluoroundecanoate	153			10.2	"	165.4	6.50	88.6%	70-130	6.30	30
perfluorodecanoate	154			10.2	"	165.4	9.47	87.4%	70-130	6.42	30
perfluorooctyl sulfonate	158			10.2	"	165.4	14.3	87.1%	70-130	9.51	30
perfluorononanoate	153			10.2	"	165.4	2.58	90.8%	70-130	4.13	30
perfluorooctanoate	156			10.2	"	165.4	6.99	90.3%	70-130	4.67	30
perfluorohexyl sulfonate	156			10.2	"	165.4	5.43	90.8%	70-130	4.25	30
perfluoroheptanoate	156			40.7	"	165.4	3.82	92.1%	70-130	6.12	30
perfluorohexanoate	162			10.2	"	165.4	12.6	90.1%	70-130	5.54	30
perfluorobutyl sulfonate	170			10.2	"	165.4	17.9	92.1%	70-130	4.03	30



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 Project Manager: Jennifer Wilson

Reported:
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Analysis by LC MS MS - Quality Control
US EPA Region 5 LSASD Analytical Services Branch

Batch B22C009 - * DEFAULT PREP *****

Matrix Spike Dup (B22C009-MSD1)		Source: 2202010-08		Prepared: Mar-09-22 Analyzed: Mar-10-22							
Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluoropentanoate	865			50.8	ng/L	826.8	59.3	97.5%	70-130	6.32	30
perfluorobutanoate	1480			50.8	"	826.8	634	102%	70-130	1.14	30
perfluorotetradecanoate	148			10.2	"	165.4	4.73	86.7%	65.8-130	5.11	30
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	132			10.2	"	165.4	U	80.0%	70-130	1.52	30
NMeFOSA	142			10.2	"	165.4	U	85.8%	70-130	4.48	30
NEtFOSA	137			10.2	"	165.4	U	82.9%	70-130	4.25	30
perfluoro-1-pentanesulfonate (PFPeS)	145			10.2	"	165.4	2.52	86.1%	70-130	3.62	30
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	135			10.2	"	165.4	1.02	81.0%	70-130	4.47	30
NMeFOSE	139			10.2	"	165.4	U	84.0%	70-130	4.47	30
NEtFOSE	131			10.2	"	165.4	1.65	78.5%	70-130	5.17	30
perfluoro-1-heptanesulfonate (PFHpS)	144			10.2	"	165.4	1.20	86.5%	70-130	4.01	30
HFPO-DA	158			10.2	"	165.4	4.38	92.7%	70-130	7.70	30
perfluoro-1-octanesulfonamide (FOSA)	144			10.2	"	165.4	0.954	86.7%	70-130	2.54	30
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	144			10.2	"	165.4	U	86.8%	70-130	5.63	30
ADONA	153			10.2	"	165.4	U	92.4%	70-130	4.45	30
9Cl-PF3ONS	147			10.2	"	165.4	U	88.9%	70-130	2.82	30
perfluoro-1-nonanesulfonate (PFNS)	148			10.2	"	165.4	U	89.3%	70-130	1.28	30
11Cl-PF3OUdS	147			10.2	"	165.4	U	89.1%	70-130	3.94	30
N-MeFOSAA	144			10.2	"	165.4	U	87.2%	70-130	5.14	30
N-EtFOSAA	157			10.2	"	165.4	U	95.0%	70-130	6.69	30
NFDHA	150			10.2	"	165.4	U	90.7%	70-130	0.671	30
perfluoro-1-decanesulfonate (PFDS)	143			10.2	"	165.4	U	86.7%	70-130	4.06	30
PFEESA	152			10.2	"	165.4	1.84	90.7%	70-130	3.76	30
PFMPA	183			10.2	"	165.4	16.1	101%	70-130	1.26	30
PFMBA	160			10.2	"	165.4	6.17	93.3%	70-130	3.22	30
3:3 FTCA	151			10.2	"	165.4	U	91.5%	70-130	8.46	30
5:3 FTCA	158			10.2	"	165.4	U	95.8%	70-130	6.75	30
7:3 FTCA	155			10.2	"	165.4	U	94.0%	70-130	7.20	30
FHUEA	155			10.2	"	165.4	U	93.8%	70-130	2.73	30



Environmental Protection Agency Region 5

US EPA Region 5 LSASD Analytical Services Branch

536 South Clark Street, Chicago, IL 60605
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Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60604

Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

Analysis by LC MS MS - Quality Control US EPA Region 5 LSASD Analytical Services Branch

Batch B22C009 - *** DEFAULT PREP ***

Matrix Spike Dup (B22C009-MSD1)		Source: 2202010-08		Prepared: Mar-09-22 Analyzed: Mar-10-22							
Analyte	Result	Flags / Qualifiers	MDL	Reporting		Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
				Limit	Units						
FOUEA	152			10.2	ng/L	165.4	U	92.1%	70-130	3.77	30
HQ-115	211			10.2	"	165.4	25.7	112%	70-130	2.49	30
PFPPrA	2610			102	"	826.8	1850	91.8%	70-142	2.52	30
PFDoS	139			10.2	"	165.4	U	84.0%	69.7-130	4.22	30
Surrogate: D-N-EtFOSA	141				"	165.4		85.1%	70-130		
Surrogate: D-N-MEFOSA	141				"	165.4		85.5%	70-130		
Surrogate: D7-N-MeFOSE	151				"	165.4		91.1%	70-130		
Surrogate: D9-N-EtFOSE	155				"	165.4		93.8%	70-130		
Surrogate: MHFPO-DA	161				"	165.4		97.5%	70-130		
Surrogate: MPFBA	170				"	165.4		103%	70-130		
Surrogate: M5PFHxA	151				"	165.4		91.4%	70-130		
Surrogate: M3PFHxS	142				"	156.4		90.5%	70-130		
Surrogate: M8PFOA	148				"	165.4		89.4%	70-130		
Surrogate: M9PFNA	150				"	165.4		90.9%	70-130		
Surrogate: M8PFOS	144				"	158.3		90.9%	70-130		
Surrogate: M6PFDA	150				"	165.4		90.8%	70-130		
Surrogate: M7PFUnA	148				"	165.4		89.4%	70-130		
Surrogate: MPFDoA	148				"	165.4		89.6%	70-130		
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	130				"	154.6		84.0%	70-130		
Surrogate: perfluoro- (1,2-13C2)octanesulfonateC13(2)-6:2 FTS	136				"	156.9		86.4%	70-130		
Surrogate: perfluoro- (1,2-13C2)decanesulfonateC13(2)-8:2 FTS	138				"	158.4		86.9%	70-130		
Surrogate: D5-N-EtFOSAA	156				"	165.4		94.4%	70-130		
Surrogate: D3-N-MeFOSAA	146				"	165.4		88.1%	70-130		
Surrogate: M3PFBS	141				"	153.6		91.5%	70-130		
Surrogate: M5PFPeA	159				"	165.4		96.3%	70-130		
Surrogate: M4PFHpA	150				"	165.4		90.8%	70-130		
Surrogate: M2PFTreA	144				"	165.4		87.0%	64.4-130		
Surrogate: M8PFOSA	148				"	165.4		89.7%	70-130		



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US EPA Region 5 LSASD Analytical Services Branch

Batch B22C010 - Solvent Extraction

Blank (B22C010-BLK1)

Prepared: Mar-09-22 Analyzed: Mar-10-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorotetradecanoate	U	Research		25.0	ng/kg						
perfluorotridecanoate	U	Research		25.0	"						
perfluorododecanoate	U	Research		25.0	"						
perfluoroundecanoate	U	Research		25.0	"						
perfluorodecanoate	U	Research		25.0	"						
perfluoro-1-decanesulfonate (PFDS)	U	Research		25.0	"						
perfluorooctyl sulfonate	U	Research		25.0	"						
perfluorononanoate	U	Research		25.0	"						
perfluoro-1-nonanesulfonate (PFNS)	U	Research		25.0	"						
perfluorooctanoate	U	Research		25.0	"						
perfluoro-1-heptanesulfonate (PFHpS)	U	Research		25.0	"						
perfluorohexyl sulfonate	U	Research		25.0	"						
perfluoroheptanoate	U	J, Research		25.0	"						
perfluorohexanoate	U	Research		25.0	"						
perfluorobutyl sulfonate	U	Research		25.0	"						
perfluoro-1-pentanesulfonate (PFPeS)	U	Research		25.0	"						
perfluoropentanoate	U	Research		125	"						
perfluorobutanoate	U	Research		125	"						
perfluoro-1-octanesulfonamide (FOSA)	U	Research		25.0	"						
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U	Research		25.0	"						
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U	Research		25.0	"						
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U	Research		25.0	"						
N-EtFOSAA	U	Research		25.0	"						
N-MeFOSAA	U	Research		25.0	"						
5:3 FTCA	U	Research		25.0	"						
PFDoS	U	Research		25.0	"						
NMeFOSA	U	Research		25.0	"						
NEtFOSA	U	Research		25.0	"						
NMeFOSE	U	Research		25.0	"						



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Reported:
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US EPA Region 5 LSASD Analytical Services Branch

Batch B22C010 - Solvent Extraction

Blank (B22C010-BLK1)

Prepared: Mar-09-22 Analyzed: Mar-10-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
NEtFOSE	U	Research		25.0	ng/kg						
HFPO-DA	U	Research		25.0	"						
ADONA	U	Research		25.0	"						
9Cl-PF3ONS	U	Research		25.0	"						
11Cl-PF3OUdS	U	Research		25.0	"						
PFPrA	U	Research		125	"						
NFDHA	U	Research		25.0	"						
PFEESA	U	Research		25.0	"						
PFMPA	U	Research		25.0	"						
PFMBA	U	Research		25.0	"						
3:3 FTCA	U	Research		25.0	"						
7:3 FTCA	U	Research		25.0	"						
FHUEA	U	Research		25.0	"						
FOUEA	U	Research		25.0	"						
HQ-115	U	Research		25.0	"						
Surrogate: D-N-EtFOSA	346	Research			"	400.0		86.6%	70-130		
Surrogate: D-N-MEFOSA	335	Research			"	400.0		83.8%	70-130		
Surrogate: D7-N-MeFOSE	326	Research			"	400.0		81.4%	70-130		
Surrogate: D9-N-EtFOSE	304	Research			"	400.0		75.9%	70-130		
Surrogate: MHFPO-DA	359	Research			"	400.0		89.7%	70-130		
Surrogate: MPFBA	448	Research			"	400.0		112%	70-130		
Surrogate: M5PFHxA	360	Research			"	400.0		90.1%	70-130		
Surrogate: M3PFHxS	347	Research			"	378.4		91.7%	70-130		
Surrogate: M8PFOA	356	Research			"	400.0		89.1%	70-130		
Surrogate: M9PFNA	356	Research			"	400.0		88.9%	70-130		
Surrogate: M8PFOS	345	Research			"	382.8		90.2%	70-130		
Surrogate: M6PFDA	358	Research			"	400.0		89.4%	70-130		
Surrogate: M7PFUnA	363	Research			"	400.0		90.8%	70-130		
Surrogate: MPFDoA	361	Research			"	400.0		90.3%	70-130		
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	322	Research			"	374.0		86.2%	70-130		
Surrogate: perfluoro- (1,2-13C2)octanesulfonateC13(2)-6:2 FTS	318	Research			"	379.6		83.7%	70-130		
Surrogate: perfluoro- (1,2-13C2)decanesulfonateC13(2)-8:2 FTS	333	Research			"	383.2		87.0%	70-130		



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Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
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US EPA Region 5 LSASD Analytical Services Branch

Batch B22C010 - Solvent Extraction

Blank (B22C010-BLK1)

Prepared: Mar-09-22 Analyzed: Mar-10-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Surrogate: D5-N-EtFOSAA	416	Research			ng/kg	400.0		104%	70-130		
Surrogate: D3-N-MeFOSAA	362	Research			"	400.0		90.5%	70-130		
Surrogate: M3PFBS	331	Research			"	371.6		89.2%	70-130		
Surrogate: M5PFPeA	379	Research			"	400.0		94.6%	70-130		
Surrogate: M4PFHpA	358	Research			"	400.0		89.4%	70-130		
Surrogate: M2PFTreA	377	Research			"	400.0		94.4%	70-130		
Surrogate: M8PFOSA	363	Research			"	400.0		90.8%	70-130		

Blank (B22C010-BLK2)

Prepared: Mar-09-22 Analyzed: Mar-10-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorotetradecanoate	U	Research		25.0	ng/kg						
perfluorotridecanoate	U	Research		25.0	"						
perfluorododecanoate	U	Research		25.0	"						
perfluoroundecanoate	U	Research		25.0	"						
perfluorodecanoate	U	Research		25.0	"						
perfluoro-1-decanesulfonate (PFDS)	U	Research		25.0	"						
perfluorooctyl sulfonate	U	Research		25.0	"						
perfluorononanoate	U	Research		25.0	"						
perfluoro-1-nonanesulfonate (PFNS)	U	Research		25.0	"						
perfluorooctanoate	U	Research		25.0	"						
perfluoro-1-heptanesulfonate (PFHpS)	U	Research		25.0	"						
perfluorohexyl sulfonate	U	Research		25.0	"						
perfluoroheptanoate	U	J, Research		25.0	"						
perfluorohexanoate	U	Research		25.0	"						
perfluorobutyl sulfonate	U	Research		25.0	"						
perfluoro-1-pentanesulfonate (PFPeS)	U	Research		25.0	"						
perfluoropentanoate	U	Research		125	"						
perfluorobutanoate	U	Research		125	"						
perfluoro-1-octanesulfonamide (FOSA)	U	Research		25.0	"						
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U	Research		25.0	"						



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Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
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US EPA Region 5 LSASD Analytical Services Branch

Batch B22C010 - Solvent Extraction

Blank (B22C010-BLK2)

Prepared: Mar-09-22 Analyzed: Mar-10-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	U	Research		25.0	ng/kg						
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	U	Research		25.0	"						
N-EtFOSAA	U	Research		25.0	"						
N-MeFOSAA	U	Research		25.0	"						
5:3 FTCA	U	Research		25.0	"						
PFDoS	U	Research		25.0	"						
NMeFOSA	U	Research		25.0	"						
NEtFOSA	U	Research		25.0	"						
NMeFOSE	U	Research		25.0	"						
NEtFOSE	U	Research		25.0	"						
HFPO-DA	U	Research		25.0	"						
ADONA	U	Research		25.0	"						
9Cl-PF3ONS	U	Research		25.0	"						
11Cl-PF3OUdS	U	Research		25.0	"						
PFPrA	U	Research		125	"						
NFDHA	U	Research		25.0	"						
PFEESA	25.3	I, Research, Q		25.0	"						
PFMPA	U	Research		25.0	"						
PFMBA	U	Research		25.0	"						
3:3 FTCA	U	Research		25.0	"						
7:3 FTCA	U	Research		25.0	"						
FHUEA	U	Research		25.0	"						
FOUEA	U	Research		25.0	"						
HQ-115	U	Research		25.0	"						
Surrogate: D-N-EtFOSA	374	Research			"	400.0		93.5%	70-130		
Surrogate: D-N-MEFOSA	363	Research			"	400.0		90.6%	70-130		
Surrogate: D7-N-MeFOSE	351	Research			"	400.0		87.8%	70-130		
Surrogate: D9-N-EtFOSE	332	Research			"	400.0		82.9%	70-130		
Surrogate: MHFPO-DA	388	Research			"	400.0		97.0%	70-130		
Surrogate: MPFBA	459	Research			"	400.0		115%	70-130		
Surrogate: M5PFHxA	368	Research			"	400.0		92.0%	70-130		
Surrogate: M3PFHxS	350	Research			"	378.4		92.4%	70-130		



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Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

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US EPA Region 5 LSASD Analytical Services Branch

Batch B22C010 - Solvent Extraction

Blank (B22C010-BLK2)

Prepared: Mar-09-22 Analyzed: Mar-10-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Surrogate: M8PFOA	367	Research			ng/kg	400.0		91.7%	70-130		
Surrogate: M9PFNA	368	Research			"	400.0		92.1%	70-130		
Surrogate: M8PFOS	344	Research			"	382.8		89.9%	70-130		
Surrogate: M6PFDA	360	Research			"	400.0		90.0%	70-130		
Surrogate: M7PFUnA	365	Research			"	400.0		91.2%	70-130		
Surrogate: MPFDoA	373	Research			"	400.0		93.1%	70-130		
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	332	Research			"	374.0		88.6%	70-130		
Surrogate: perfluoro- (1,2-13C2)octanesulfonateC13(2)-6:2 FTS	332	Research			"	379.6		87.6%	70-130		
Surrogate: perfluoro- (1,2-13C2)decanesulfonateC13(2)-8:2 FTS	334	Research			"	383.2		87.2%	70-130		
Surrogate: D5-N-EtFOSAA	409	Research			"	400.0		102%	70-130		
Surrogate: D3-N-MeFOSAA	367	Research			"	400.0		91.7%	70-130		
Surrogate: M3PFBS	340	Research			"	371.6		91.5%	70-130		
Surrogate: M5PFPeA	394	Research			"	400.0		98.6%	70-130		
Surrogate: M4PFHpA	369	Research			"	400.0		92.2%	70-130		
Surrogate: M2PFTreA	395	Research			"	400.0		98.9%	70-130		
Surrogate: M8PFOSA	366	Research			"	400.0		91.6%	70-130		

LCS (B22C010-BS1)

Prepared: Mar-09-22 Analyzed: Mar-10-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorotetradecanoate	378	Research		25.0	ng/kg	400.0		94.4%	70-130		
perfluorotridecanoate	357	Research		25.0	"	400.0		89.3%	70-130		
perfluorododecanoate	351	Research		25.0	"	400.0		87.6%	70-130		
perfluoroundecanoate	345	Research		25.0	"	400.0		86.3%	70-130		
perfluorodecanoate	343	Research		25.0	"	400.0		85.7%	70-130		
perfluoro-1-decanesulfonate (PFDS)	365	Research		25.0	"	400.0		91.1%	70-130		
perfluorooctyl sulfonate	349	Research		25.0	"	400.0		87.3%	70-130		
perfluorononanoate	340	Research		25.0	"	400.0		85.1%	70-130		
perfluoro-1-nonanesulfonate (PFNS)	352	Research		25.0	"	400.0		87.9%	70-130		
perfluorooctanoate	345	Research		25.0	"	400.0		86.3%	70-130		
perfluoro-1-heptanesulfonate (PFHpS)	344	Research		25.0	"	400.0		85.9%	70-130		
perfluorohexyl sulfonate	334	Research		25.0	"	400.0		83.6%	70-130		



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US EPA Region 5 LSASD Analytical Services Branch

Batch B22C010 - Solvent Extraction

LCS (B22C010-BS1)

Prepared: Mar-09-22 Analyzed: Mar-10-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluoroheptanoate	345	Research		25.0	ng/kg	400.0		86.2%	70-130		
perfluorohexanoate	348	Research		25.0	"	400.0		87.0%	70-130		
perfluorobutyl sulfonate	349	Research		25.0	"	400.0		87.2%	70-130		
perfluoro-1-pentanesulfonate (PFPeS)	348	Research		25.0	"	400.0		87.0%	70-130		
perfluoropentanoate	1810	Research		125	"	2000		90.6%	70-130		
perfluorobutanoate	2120	Research		125	"	2000		106%	70-130		
perfluoro-1-octanesulfonamide (FOSA)	362	Research		25.0	"	400.0		90.5%	70-130		
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	357	Research		25.0	"	400.0		89.1%	70-130		
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	354	Research		25.0	"	400.0		88.4%	70-130		
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	335	Research		25.0	"	400.0		83.8%	70-130		
N-EtFOSAA	420	Research		25.0	"	400.0		105%	70-130		
N-MeFOSAA	356	Research		25.0	"	400.0		89.1%	70-130		
5:3 FTCA	357	Research		25.0	"	400.0		89.3%	70-130		
PFDoS	348	Research		25.0	"	400.0		87.0%	70-130		
NMeFOSA	351	Research		25.0	"	400.0		87.7%	70-130		
NEtFOSA	354	Research		25.0	"	400.0		88.4%	70-130		
NMeFOSE	328	Research		25.0	"	400.0		82.1%	70-130		
NEtFOSE	316	Research		25.0	"	400.0		78.9%	70-130		
HFPO-DA	347	Research		25.0	"	400.0		86.7%	70-130		
ADONA	345	Research		25.0	"	400.0		86.2%	70-130		
9Cl-PF3ONS	343	Research		25.0	"	400.0		85.7%	70-130		
11Cl-PF3OUdS	347	Research		25.0	"	400.0		86.7%	70-130		
PFPrA	2270	Research		125	"	2000		114%	70-130		
NFDHA	340	Research		25.0	"	400.0		85.1%	70-130		
PFEESA	370	Research		25.0	"	400.0		92.5%	70-130		
PFMPA	424	Research		25.0	"	400.0		106%	70-130		
PFMBA	351	Research		25.0	"	400.0		87.8%	70-130		
3:3 FTCA	362	Research		25.0	"	400.0		90.4%	70-130		
7:3 FTCA	362	Research		25.0	"	400.0		90.4%	70-130		



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US EPA Region 5 LSASD Analytical Services Branch

Batch B22C010 - Solvent Extraction

LCS (B22C010-BS1)

Prepared: Mar-09-22 Analyzed: Mar-10-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
FHUEA	351	Research		25.0	ng/kg	400.0		87.7%	70-130		
FOUEA	356	Research		25.0	"	400.0		88.9%	70-130		
HQ-115	366	Research		25.0	"	400.0		91.5%	70-130		
Surrogate: D-N-EtFOSA	363	Research			"	400.0		90.8%	70-130		
Surrogate: D-N-MEFOSA	345	Research			"	400.0		86.1%	70-130		
Surrogate: D7-N-MeFOSE	346	Research			"	400.0		86.6%	70-130		
Surrogate: D9-N-EtFOSE	364	Research			"	400.0		90.9%	70-130		
Surrogate: MHFPO-DA	401	Research			"	400.0		100%	70-130		
Surrogate: MPFBA	479	Research			"	400.0		120%	70-130		
Surrogate: M5PFHxA	383	Research			"	400.0		95.6%	70-130		
Surrogate: M3PFHxS	368	Research			"	378.4		97.3%	70-130		
Surrogate: M8PFOA	386	Research			"	400.0		96.5%	70-130		
Surrogate: M9PFNA	379	Research			"	400.0		94.7%	70-130		
Surrogate: M8PFOS	371	Research			"	382.8		97.0%	70-130		
Surrogate: M6PFDA	382	Research			"	400.0		95.4%	70-130		
Surrogate: M7PFUnA	387	Research			"	400.0		96.7%	70-130		
Surrogate: MPFDoA	392	Research			"	400.0		98.1%	70-130		
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	368	Research			"	374.0		98.4%	70-130		
Surrogate: perfluoro- (1,2-13C2)octanesulfonateC13(2)-6:2 FTS	363	Research			"	379.6		95.6%	70-130		
Surrogate: perfluoro- (1,2-13C2)decanesulfonateC13(2)-8:2 FTS	361	Research			"	383.2		94.1%	70-130		
Surrogate: D5-N-EtFOSAA	440	Research			"	400.0		110%	70-130		
Surrogate: D3-N-MeFOSAA	390	Research			"	400.0		97.4%	70-130		
Surrogate: M3PFBS	360	Research			"	371.6		97.0%	70-130		
Surrogate: M5PFPeA	409	Research			"	400.0		102%	70-130		
Surrogate: M4PFHpA	386	Research			"	400.0		96.5%	70-130		
Surrogate: M2PFTreA	416	Research			"	400.0		104%	70-130		
Surrogate: M8PFOSA	390	Research			"	400.0		97.5%	70-130		



Environmental Protection Agency Region 5

US EPA Region 5 LSASD Analytical Services Branch

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Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

PFC - Quality Control

US EPA Region 5 LSASD Analytical Services Branch

Batch B22C010 - Solvent Extraction

LCS Dup (B22C010-BSD1)

Prepared: Mar-09-22 Analyzed: Mar-10-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorotetradecanoate	397	Research		25.0	ng/kg	400.0		99.3%	70-130	5.07	30
perfluorotridecanoate	370	Research		25.0	"	400.0		92.5%	70-130	3.48	30
perfluorododecanoate	378	Research		25.0	"	400.0		94.5%	70-130	7.55	30
perfluoroundecanoate	383	Research		25.0	"	400.0		95.7%	70-130	10.3	30
perfluorodecanoate	371	Research		25.0	"	400.0		92.7%	70-130	7.81	30
perfluoro-1-decanesulfonate (PFDS)	381	Research		25.0	"	400.0		95.1%	70-130	4.29	30
perfluorooctyl sulfonate	376	Research		25.0	"	400.0		93.9%	70-130	7.32	30
perfluorononanoate	368	Research		25.0	"	400.0		92.1%	70-130	7.89	30
perfluoro-1-nonanesulfonate (PFNS)	376	Research		25.0	"	400.0		93.9%	70-130	6.66	30
perfluorooctanoate	374	Research		25.0	"	400.0		93.5%	70-130	7.97	30
perfluoro-1-heptanesulfonate (PFHpS)	363	Research		25.0	"	400.0		90.7%	70-130	5.44	30
perfluorohexyl sulfonate	368	Research		25.0	"	400.0		92.0%	70-130	9.58	30
perfluoroheptanoate	374	Research		25.0	"	400.0		93.4%	70-130	8.09	30
perfluorohexanoate	371	Research		25.0	"	400.0		92.8%	70-130	6.51	30
perfluorobutyl sulfonate	375	Research		25.0	"	400.0		93.7%	70-130	7.22	30
perfluoro-1-pentanesulfonate (PFPeS)	368	Research		25.0	"	400.0		91.9%	70-130	5.49	30
perfluoropentanoate	1960	Research		125	"	2000		97.9%	70-130	7.82	30
perfluorobutanoate	2300	Research		125	"	2000		115%	70-130	8.45	30
perfluoro-1-octanesulfonamide (FOSA)	375	Research		25.0	"	400.0		93.7%	70-130	3.50	30
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	370	Research		25.0	"	400.0		92.6%	70-130	3.82	30
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	366	Research		25.0	"	400.0		91.4%	70-130	3.37	30
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	373	Research		25.0	"	400.0		93.1%	70-130	10.6	30
N-EtFOSAA	465	Research		25.0	"	400.0		116%	70-130	10.3	30
N-MeFOSAA	373	Research		25.0	"	400.0		93.3%	70-130	4.63	30
5:3 FTCA	374	Research		25.0	"	400.0		93.5%	70-130	4.55	30
PFDoS	365	Research		25.0	"	400.0		91.2%	70-130	4.74	30
NMeFOSA	384	Research		25.0	"	400.0		96.0%	70-130	9.02	30
NEtFOSA	373	Research		25.0	"	400.0		93.1%	70-130	5.16	30
NMeFOSE	349	Research		25.0	"	400.0		87.2%	70-130	6.03	30



Environmental Protection Agency Region 5

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Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

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US EPA Region 5 LSASD Analytical Services Branch

Batch B22C010 - Solvent Extraction

LCS Dup (B22C010-BSD1)

Prepared: Mar-09-22 Analyzed: Mar-10-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
NEtFOSE	319	Research		25.0	ng/kg	400.0		79.8%	70-130	1.12	30
HFPO-DA	355	Research		25.0	"	400.0		88.8%	70-130	2.30	30
ADONA	361	Research		25.0	"	400.0		90.2%	70-130	4.43	30
9Cl-PF3ONS	357	Research		25.0	"	400.0		89.2%	70-130	3.90	30
11Cl-PF3OUdS	366	Research		25.0	"	400.0		91.5%	70-130	5.42	30
PFPPrA	2430	Research		125	"	2000		121%	70-130	6.55	30
NFDHA	380	Research		25.0	"	400.0		95.0%	70-130	11.0	30
PFEESA	378	Research		25.0	"	400.0		94.6%	70-130	2.22	30
PFMPA	449	Research		25.0	"	400.0		112%	70-130	5.68	30
PFMBA	369	Research		25.0	"	400.0		92.2%	70-130	4.85	30
3:3 FTCA	369	Research		25.0	"	400.0		92.2%	70-130	1.98	30
7:3 FTCA	368	Research		25.0	"	400.0		92.1%	70-130	1.84	30
FHUEA	371	Research		25.0	"	400.0		92.6%	70-130	5.44	30
FOUEA	375	Research		25.0	"	400.0		93.7%	70-130	5.18	30
HQ-115	377	Research		25.0	"	400.0		94.3%	70-130	3.07	30
Surrogate: D-N-EtFOSA	331	Research			"	400.0		82.8%	70-130		
Surrogate: D-N-MeFOSA	309	Research			"	400.0		77.3%	70-130		
Surrogate: D7-N-MeFOSE	329	Research			"	400.0		82.3%	70-130		
Surrogate: D9-N-EtFOSE	308	Research			"	400.0		77.0%	70-130		
Surrogate: MHFPO-DA	349	Research			"	400.0		87.2%	70-130		
Surrogate: MPFBA	428	Research			"	400.0		107%	70-130		
Surrogate: M5PFHxA	350	Research			"	400.0		87.5%	70-130		
Surrogate: M3PFHxS	326	Research			"	378.4		86.1%	70-130		
Surrogate: M8PFOA	343	Research			"	400.0		85.8%	70-130		
Surrogate: M9PFNA	343	Research			"	400.0		85.7%	70-130		
Surrogate: M8PFOS	336	Research			"	382.8		87.7%	70-130		
Surrogate: M6PFDA	347	Research			"	400.0		86.7%	70-130		
Surrogate: M7PFUnA	349	Research			"	400.0		87.2%	70-130		
Surrogate: MPFDoA	351	Research			"	400.0		87.8%	70-130		
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	330	Research			"	374.0		88.1%	70-130		
Surrogate: perfluoro- (1,2-13C2)octanesulfonateC13(2)-6:2 FTS	318	Research			"	379.6		83.9%	70-130		
Surrogate: perfluoro- (1,2-13C2)decanesulfonateC13(2)-8:2 FTS	335	Research			"	383.2		87.5%	70-130		



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Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

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US EPA Region 5 LSASD Analytical Services Branch

Batch B22C010 - Solvent Extraction

LCS Dup (B22C010-BSD1)

Prepared: Mar-09-22 Analyzed: Mar-10-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Surrogate: D5-N-EtFOSAA	412	Research			ng/kg	400.0		103%	70-130		
Surrogate: D3-N-MeFOSAA	349	Research			"	400.0		87.2%	70-130		
Surrogate: M3PFBS	326	Research			"	371.6		87.8%	70-130		
Surrogate: M5PFPeA	368	Research			"	400.0		91.9%	70-130		
Surrogate: M4PFHpA	349	Research			"	400.0		87.3%	70-130		
Surrogate: M2PFTreA	366	Research			"	400.0		91.4%	70-130		
Surrogate: M8PFOSA	350	Research			"	400.0		87.5%	70-130		

Duplicate (B22C010-DUP1)

Source: 2202010-03

Prepared: Mar-09-22 Analyzed: Mar-10-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorotetradecanoate	17.9	Research		35.8	ng/kg dry		14.1			24.1	30
perfluorotridecanoate	21.7	Research, Q		35.8	"		13.1			49.5	30
perfluorododecanoate	23.3	Research		35.8	"		22.8			2.26	30
perfluoroundecanoate	34.1	Research		35.8	"		29.2			15.6	30
perfluorodecanoate	52.2	Research		35.8	"		49.3			5.67	30
perfluoro-1-decanesulfonate (PFDS)	7.89	Research		35.8	"		6.53			18.9	30
perfluorooctyl sulfonate	413	Research		35.8	"		374			9.93	30
perfluorononanoate	49.0	Research		35.8	"		45.4			7.62	30
perfluoro-1-nonanesulfonate (PFNS)	U	Research		35.8	"		U				30
perfluorooctanoate	42.4	Research		35.8	"		43.3			2.17	30
perfluoro-1-heptanesulfonate (PFHpS)	6.78	Research, Q		35.8	"		4.96			31.1	30
perfluorohexyl sulfonate	5.43	Research		35.8	"		5.43			0.0423	30
perfluoroheptanoate	20.2	J, Research		35.8	"		19.9			1.22	30
perfluorohexanoate	13.4	Research		35.8	"		13.7			2.19	30
perfluorobutyl sulfonate	24.8	Research		35.8	"		22.2			11.1	30
perfluoro-1-pentanesulfonate (PFPeS)	U	Research		35.8	"		4.16				30
perfluoropentanoate	93.6	Research		179	"		83.0			12.0	30
perfluorobutanoate	1410	Research		179	"		1340			5.23	30
perfluoro-1-octanesulfonamide (FOSA)	5.11	Research, Q		35.8	"		3.52			36.9	30
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	U	Research		35.8	"		U				30



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Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
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US EPA Region 5 LSASD Analytical Services Branch

Batch B22C010 - Solvent Extraction

Duplicate (B22C010-DUP1)		Source: 2202010-03		Prepared: Mar-09-22 Analyzed: Mar-10-22							
Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	7.62	Research, Q		35.8	ng/kg dry		4.19			58.0	30
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	7.19	Research, Q		35.8	"		4.91			37.6	30
N-EtFOSAA	4.44	Research		35.8	"		U				30
N-MeFOSAA	U	Research		35.8	"		U				30
5:3 FTCA	U	Research		35.8	"		U				30
PFDoS	U	Research		35.8	"		U				30
NMeFOSA	U	Research		35.8	"		U				30
NEtFOSA	U	Research		35.8	"		U				30
NMeFOSE	U	J, Research		35.8	"		U				30
NEtFOSE	U	J, Research		35.8	"		U				30
HFPO-DA	13.0	Research, Q		35.8	"		9.25			33.6	30
ADONA	U	Research		35.8	"		U				30
9Cl-PF3ONS	4.75	Research, Q		35.8	"		3.46			31.4	30
11Cl-PF3OUdS	2.59	Research		35.8	"		U				30
PFPrA	1620	Research		179	"		1490			7.81	30
NFDHA	U	Research		35.8	"		U				30
PFEESA	46.6	Research, Q		50.1	"		23.4			66.4	30
PFMPA	766	Research		35.8	"		734			4.28	30
PFMBA	51.0	Research		35.8	"		46.7			8.74	30
3:3 FTCA	U	Research		35.8	"		U				30
7:3 FTCA	U	Research		35.8	"		U				30
FHUEA	U	Research		35.8	"		U				30
FOUEA	3.48	Research		35.8	"		2.69			25.8	30
HQ-115	19.6	Research		35.8	"		15.8			21.7	30
Surrogate: D-N-EtFOSA	510	Research			"	572.2		89.1%	70-130		
Surrogate: D-N-MeFOSA	492	Research			"	572.2		85.9%	70-130		
Surrogate: D7-N-MeFOSE	384	Research, Q			"	572.2		67.1%	70-130		
Surrogate: D9-N-EtFOSE	331	Research, Q			"	572.2		57.8%	70-130		
Surrogate: MHFPO-DA	480	Research			"	572.2		83.9%	70-130		
Surrogate: MPFBA	695	Research			"	572.2		121%	70-130		
Surrogate: M5PFHxA	532	Research			"	572.2		93.0%	70-130		
Surrogate: M3PFHxS	501	Research			"	541.3		92.6%	70-130		



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Batch B22C010 - Solvent Extraction

Duplicate (B22C010-DUP1)			Source: 2202010-03		Prepared: Mar-09-22 Analyzed: Mar-10-22						
Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Surrogate: M8PFOA	544	Research			ng/kg dry	572.2		95.1%	70-130		
Surrogate: M9PFNA	527	Research			"	572.2		92.2%	70-130		
Surrogate: M8PFOS	525	Research			"	547.6		95.8%	70-130		
Surrogate: M6PFDA	559	Research			"	572.2		97.7%	70-130		
Surrogate: M7PFUnA	562	Research			"	572.2		98.2%	70-130		
Surrogate: MPFDoA	557	Research			"	572.2		97.4%	70-130		
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	507	Research			"	535.0		94.8%	70-130		
Surrogate: perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	507	Research			"	543.0		93.3%	70-130		
Surrogate: perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	551	Research			"	548.1		101%	70-130		
Surrogate: D5-N-EtFOSAA	632	Research			"	572.2		110%	70-130		
Surrogate: D3-N-MeFOSAA	534	Research			"	572.2		93.3%	70-130		
Surrogate: M3PFBS	500	Research			"	531.5		94.1%	70-130		
Surrogate: M5PFPeA	588	Research			"	572.2		103%	70-130		
Surrogate: M4PFHpA	552	Research			"	572.2		96.5%	70-130		
Surrogate: M2PFTreA	605	Research			"	572.2		106%	70-130		
Surrogate: M8PFOSA	562	Research			"	572.2		98.3%	70-130		

MRL Check (B22C010-MRL1)

			Prepared: Mar-09-22 Analyzed: Mar-10-22								
Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorotetradecanoate	24.2	Research		25.0	ng/kg	25.00		96.7%	50-150		
perfluorotridecanoate	19.5	Research		25.0	"	25.00		77.9%	50-150		
perfluorododecanoate	15.8	Research		25.0	"	25.00		63.1%	50-150		
perfluoroundecanoate	16.2	Research		25.0	"	25.00		65.0%	50-150		
perfluorodecanoate	17.4	Research		25.0	"	25.00		69.5%	50-150		
perfluoro-1-decanesulfonate (PFDS)	11.0	Research, Q		25.0	"	25.00		44.1%	50-150		
perfluorooctyl sulfonate	18.8	Research		25.0	"	25.00		75.0%	50-150		
perfluorononanoate	14.5	Research		25.0	"	25.00		58.0%	50-150		
perfluoro-1-nonanesulfonate (PFNS)	11.9	Research, Q		25.0	"	25.00		47.4%	50-150		
perfluorooctanoate	18.0	Research		25.0	"	25.00		72.0%	50-150		
perfluoro-1-heptanesulfonate (PFHpS)	12.7	Research		25.0	"	25.00		50.6%	50-150		
perfluorohexyl sulfonate	13.2	Research		25.0	"	25.00		52.7%	50-150		



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Batch B22C010 - Solvent Extraction

MRL Check (B22C010-MRL1)

Prepared: Mar-09-22 Analyzed: Mar-10-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluoroheptanoate	14.3	J, Research		25.0	ng/kg	25.00		57.1%	50-150		
perfluorohexanoate	12.2	Research, Q		25.0	"	25.00		48.6%	50-150		
perfluorobutyl sulfonate	13.9	Research		25.0	"	25.00		55.6%	50-150		
perfluoro-1-pentanesulfonate (PFPeS)	12.1	Research, Q		25.0	"	25.00		48.3%	50-150		
perfluoropentanoate	64.9	Research		125	"	125.0		51.9%	50-150		
perfluorobutanoate	74.2	Research		125	"	125.0		59.4%	50-150		
perfluoro-1-octanesulfonamide (FOSA)	11.7	Research, Q		25.0	"	25.00		46.9%	50-150		
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	11.0	Research, Q		25.0	"	25.00		44.1%	50-150		
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	14.7	Research		25.0	"	25.00		58.7%	50-150		
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	14.3	Research		25.0	"	25.00		57.2%	50-150		
N-EtFOSAA	14.1	I, Research		25.0	"	25.00		56.4%	50-150		
N-MeFOSAA	11.5	Research, Q		25.0	"	25.00		46.1%	50-150		
5:3 FTCA	10.7	Research, Q		25.0	"	25.00		42.8%	50-150		
PFDoS	12.2	Research, Q		25.0	"	25.00		48.7%	50-150		
NMeFOSA	9.68	Research, Q		25.0	"	25.00		38.7%	50-150		
NEtFOSA	12.8	Research		25.0	"	25.00		51.4%	50-150		
NMeFOSE	11.2	Research, Q		25.0	"	25.00		44.6%	50-150		
NEtFOSE	13.7	Research		25.0	"	25.00		54.9%	50-150		
HFPO-DA	13.6	Research		25.0	"	25.00		54.3%	50-150		
ADONA	12.1	Research, Q		25.0	"	25.00		48.3%	50-150		
9Cl-PF3ONS	12.9	I, Research		25.0	"	25.00		51.5%	50-150		
11Cl-PF3OUdS	11.7	Research, Q		25.0	"	25.00		46.9%	50-150		
PFPrA	78.7	Research		125	"	125.0		62.9%	50-150		
NFDHA	12.3	Research, Q		25.0	"	25.00		49.3%	50-150		
PFEESA	37.0	Research		25.0	"	25.00		148%	50-150		
PFMPA	13.1	Research		25.0	"	25.00		52.3%	50-150		
PFMBA	15.2	Research		25.0	"	25.00		60.7%	50-150		
3:3 FTCA	10.5	I, Research, Q		25.0	"	25.00		41.9%	50-150		
7:3 FTCA	14.7	Research		25.0	"	25.00		58.8%	50-150		



Environmental Protection Agency Region 5

US EPA Region 5 LSASD Analytical Services Branch

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Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60604

Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

PFC - Quality Control

US EPA Region 5 LSASD Analytical Services Branch

Batch B22C010 - Solvent Extraction

MRL Check (B22C010-MRL1)

Prepared: Mar-09-22 Analyzed: Mar-10-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
FHUEA	12.0	Research, Q		25.0	ng/kg	25.00		48.1%	50-150		
FOUEA	12.5	Research		25.0	"	25.00		50.2%	50-150		
HQ-115	31.7	Research		25.0	"	25.00		127%	50-150		
Surrogate: D-N-EtFOSA	399	Research			"	400.0		99.7%	70-130		
Surrogate: D-N-MEFOSA	377	Research			"	400.0		94.2%	70-130		
Surrogate: D7-N-MeFOSE	376	Research			"	400.0		93.9%	70-130		
Surrogate: D9-N-EtFOSE	355	Research			"	400.0		88.7%	70-130		
Surrogate: MHFPO-DA	397	Research			"	400.0		99.2%	70-130		
Surrogate: MPFBA	464	Research			"	400.0		116%	70-130		
Surrogate: M5PFHxA	373	Research			"	400.0		93.1%	70-130		
Surrogate: M3PFHxS	346	Research			"	378.4		91.6%	70-130		
Surrogate: M8PFOA	370	Research			"	400.0		92.6%	70-130		
Surrogate: M9PFNA	370	Research			"	400.0		92.6%	70-130		
Surrogate: M8PFOS	348	Research			"	382.8		90.9%	70-130		
Surrogate: M6PFDA	365	Research			"	400.0		91.2%	70-130		
Surrogate: M7PFUnA	372	Research			"	400.0		92.9%	70-130		
Surrogate: MPFDoA	368	Research			"	400.0		92.1%	70-130		
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	335	Research			"	374.0		89.7%	70-130		
Surrogate: perfluoro- (1,2-13C2)octanesulfonateC13(2)-6:2 FTS	330	Research			"	379.6		87.0%	70-130		
Surrogate: perfluoro- (1,2-13C2)decanesulfonateC13(2)-8:2 FTS	331	Research			"	383.2		86.5%	70-130		
Surrogate: D5-N-EtFOSAA	414	Research			"	400.0		103%	70-130		
Surrogate: D3-N-MeFOSAA	371	Research			"	400.0		92.8%	70-130		
Surrogate: M3PFBS	353	Research			"	371.6		95.1%	70-130		
Surrogate: M5PFPeA	395	Research			"	400.0		98.7%	70-130		
Surrogate: M4PFHpA	371	Research			"	400.0		92.8%	70-130		
Surrogate: M2PFTreA	406	Research			"	400.0		101%	70-130		
Surrogate: M8PFOSA	376	Research			"	400.0		94.0%	70-130		



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Project Number: [none]

Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

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US EPA Region 5 LSASD Analytical Services Branch

Batch B22C010 - Solvent Extraction

MRL Check (B22C010-MRL2)

Prepared: Mar-09-22 Analyzed: Mar-10-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorotetradecanoate	31.7	Research		25.0	ng/kg	25.00		127%	50-150		
perfluorotridecanoate	27.1	Research		25.0	"	25.00		108%	50-150		
perfluorododecanoate	26.7	Research		25.0	"	25.00		107%	50-150		
perfluoroundecanoate	25.3	Research		25.0	"	25.00		101%	50-150		
perfluorodecanoate	27.2	Research		25.0	"	25.00		109%	50-150		
perfluoro-1-decanesulfonate (PFDS)	22.5	Research		25.0	"	25.00		90.0%	50-150		
perfluorooctyl sulfonate	26.5	Research		25.0	"	25.00		106%	50-150		
perfluorononanoate	25.3	Research		25.0	"	25.00		101%	50-150		
perfluoro-1-nonanesulfonate (PFNS)	25.2	Research		25.0	"	25.00		101%	50-150		
perfluorooctanoate	29.0	Research		25.0	"	25.00		116%	50-150		
perfluoro-1-heptanesulfonate (PFHpS)	23.0	Research		25.0	"	25.00		92.1%	50-150		
perfluorohexyl sulfonate	22.0	Research		25.0	"	25.00		88.0%	50-150		
perfluoroheptanoate	24.2	J, Research		25.0	"	25.00		96.7%	50-150		
perfluorohexanoate	24.4	Research		25.0	"	25.00		97.6%	50-150		
perfluorobutyl sulfonate	25.1	Research		25.0	"	25.00		101%	50-150		
perfluoro-1-pentanesulfonate (PFPeS)	22.5	Research		25.0	"	25.00		89.9%	50-150		
perfluoropentanoate	122	Research		125	"	125.0		97.6%	50-150		
perfluorobutanoate	135	Research		125	"	125.0		108%	50-150		
perfluoro-1-octanesulfonamide (FOSA)	24.9	Research		25.0	"	25.00		99.5%	50-150		
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	21.3	Research		25.0	"	25.00		85.2%	50-150		
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	24.4	Research		25.0	"	25.00		97.4%	50-150		
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	25.3	Research		25.0	"	25.00		101%	50-150		
N-EtFOSAA	29.1	Research		25.0	"	25.00		116%	50-150		
N-MeFOSAA	23.4	Research		25.0	"	25.00		93.6%	50-150		
5:3 FTCA	22.9	Research		25.0	"	25.00		91.7%	50-150		
PFDoS	22.9	Research		25.0	"	25.00		91.7%	50-150		
NMeFOSA	20.7	Research		25.0	"	25.00		82.7%	50-150		
NEtFOSA	23.1	Research		25.0	"	25.00		92.5%	50-150		
NMeFOSE	20.4	Research		25.0	"	25.00		81.7%	50-150		



Environmental Protection Agency Region 5

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Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

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US EPA Region 5 LSASD Analytical Services Branch

Batch B22C010 - Solvent Extraction

MRL Check (B22C010-MRL2)

Prepared: Mar-09-22 Analyzed: Mar-10-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
NEtFOSE	23.8	Research		25.0	ng/kg	25.00		95.1%	50-150		
HFPO-DA	23.7	Research		25.0	"	25.00		95.0%	50-150		
ADONA	23.2	Research		25.0	"	25.00		92.9%	50-150		
9Cl-PF3ONS	24.1	Research		25.0	"	25.00		96.4%	50-150		
11Cl-PF3OUdS	22.8	Research		25.0	"	25.00		91.1%	50-150		
PFPPrA	134	Research		125	"	125.0		107%	50-150		
NFDHA	22.4	Research		25.0	"	25.00		89.7%	50-150		
PFEESA	46.9	Research, Q		25.0	"	25.00		188%	50-150		
PFMPA	28.5	Research		25.0	"	25.00		114%	50-150		
PFMBA	25.3	Research		25.0	"	25.00		101%	50-150		
3:3 FTCA	21.7	I, Research		25.0	"	25.00		86.9%	50-150		
7:3 FTCA	23.6	Research		25.0	"	25.00		94.4%	50-150		
FHUEA	21.0	Research		25.0	"	25.00		84.2%	50-150		
FOUEA	24.6	Research		25.0	"	25.00		98.6%	50-150		
HQ-115	34.3	Research		25.0	"	25.00		137%	50-150		
Surrogate: D-N-EtFOSA	388	Research			"	400.0		96.9%	70-130		
Surrogate: D-N-MeFOSA	378	Research			"	400.0		94.5%	70-130		
Surrogate: D7-N-MeFOSE	365	Research			"	400.0		91.2%	70-130		
Surrogate: D9-N-EtFOSE	352	Research			"	400.0		88.0%	70-130		
Surrogate: MHFPO-DA	389	Research			"	400.0		97.1%	70-130		
Surrogate: MPFBA	477	Research			"	400.0		119%	70-130		
Surrogate: M5PFHxA	379	Research			"	400.0		94.7%	70-130		
Surrogate: M3PFHxS	362	Research			"	378.4		95.7%	70-130		
Surrogate: M8PFOA	379	Research			"	400.0		94.7%	70-130		
Surrogate: M9PFNA	381	Research			"	400.0		95.4%	70-130		
Surrogate: M8PFOS	362	Research			"	382.8		94.5%	70-130		
Surrogate: M6PFDA	384	Research			"	400.0		95.9%	70-130		
Surrogate: M7PFUnA	390	Research			"	400.0		97.6%	70-130		
Surrogate: MPFDoA	392	Research			"	400.0		98.0%	70-130		
Surrogate: perfluoro-(1,2-13C2)hexanesulfonateC13(2)-4:	337	Research			"	374.0		90.0%	70-130		
Surrogate: perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	342	Research			"	379.6		90.0%	70-130		
Surrogate: perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	357	Research			"	383.2		93.2%	70-130		



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Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

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US EPA Region 5 LSASD Analytical Services Branch

Batch B22C010 - Solvent Extraction

MRL Check (B22C010-MRL2)

Prepared: Mar-09-22 Analyzed: Mar-10-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Surrogate: D5-N-EtFOSAA	457	Research			ng/kg	400.0		114%	70-130		
Surrogate: D3-N-MeFOSAA	390	Research			"	400.0		97.5%	70-130		
Surrogate: M3PFBS	363	Research			"	371.6		97.7%	70-130		
Surrogate: M5PFPeA	401	Research			"	400.0		100%	70-130		
Surrogate: M4PFHpA	378	Research			"	400.0		94.6%	70-130		
Surrogate: M2PFTreA	436	Research			"	400.0		109%	70-130		
Surrogate: M8PFOSA	394	Research			"	400.0		98.5%	70-130		

Matrix Spike (B22C010-MS1)

Source: 2202010-03

Prepared: Mar-09-22 Analyzed: Mar-10-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorotetradecanoate	307	Research		23.8	ng/kg dry	380.4	14.1	77.1%	70-130		
perfluorotridecanoate	326	Research		23.8	"	380.4	13.1	82.3%	70-130		
perfluorododecanoate	332	Research		23.8	"	380.4	22.8	81.3%	70-130		
perfluoroundecanoate	351	Research		23.8	"	380.4	29.2	84.7%	70-130		
perfluorodecanoate	359	Research		23.8	"	380.4	49.3	81.4%	70-130		
perfluoro-1-decanesulfonate (PFDS)	332	Research		23.8	"	380.4	6.53	85.5%	70-130		
perfluorooctyl sulfonate	690	Research		23.8	"	380.4	374	83.0%	70-130		
perfluorononanoate	350	Research		23.8	"	380.4	45.4	80.2%	70-130		
perfluoro-1-nonanesulfonate (PFNS)	315	Research		23.8	"	380.4	U	82.9%	70-130		
perfluorooctanoate	355	Research		23.8	"	380.4	43.3	82.0%	70-130		
perfluoro-1-heptanesulfonate (PFHpS)	303	Research		23.8	"	380.4	4.96	78.4%	70-130		
perfluorohexyl sulfonate	313	Research		23.8	"	380.4	5.43	80.9%	70-130		
perfluoroheptanoate	334	Research		23.8	"	380.4	19.9	82.5%	70-130		
perfluorohexanoate	329	Research		23.8	"	380.4	13.7	83.0%	70-130		
perfluorobutyl sulfonate	328	Research		23.8	"	380.4	22.2	80.4%	70-130		
perfluoro-1-pentanesulfonate (PFPeS)	305	Research		23.8	"	380.4	4.16	79.1%	70-130		
perfluoropentanoate	1690	Research		119	"	1902	83.0	84.6%	70-130		
perfluorobutanoate	3280	Research		119	"	1902	1340	102%	70-130		
perfluoro-1-octanesulfonamide (FOSA)	312	Research		23.8	"	380.4	3.52	81.2%	70-130		
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	318	Research		23.8	"	380.4	U	83.5%	70-130		



Environmental Protection Agency Region 5

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Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

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US EPA Region 5 LSASD Analytical Services Branch

Batch B22C010 - Solvent Extraction

Matrix Spike (B22C010-MS1)

Source: 2202010-03

Prepared: Mar-09-22 Analyzed: Mar-10-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	331	Research		23.8	ng/kg dry	380.4	4.19	85.8%	70-130		
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	343	Research		23.8	"	380.4	4.91	88.9%	70-130		
N-EtFOSAA	425	Research		23.8	"	380.4	U	112%	70-130		
N-MeFOSAA	310	Research		23.8	"	380.4	U	81.4%	70-130		
5:3 FTCA	322	Research		23.8	"	380.4	U	84.6%	70-130		
PFDoS	269	Research		23.8	"	380.4	U	70.6%	70-130		
NMeFOSA	315	Research		23.8	"	380.4	U	82.7%	70-130		
NEtFOSA	314	Research		23.8	"	380.4	U	82.4%	70-130		
NMeFOSE	178	L, Research, Q		23.8	"	380.4	U	46.7%	70-130		
NEtFOSE	138	L, Research, Q		23.8	"	380.4	U	36.4%	70-130		
HFPO-DA	300	Research		23.8	"	380.4	9.25	76.4%	70-130		
ADONA	306	Research		23.8	"	380.4	U	80.6%	70-130		
9Cl-PF3ONS	313	Research		23.8	"	380.4	3.46	81.2%	70-130		
11Cl-PF3OUdS	303	Research		23.8	"	380.4	U	79.6%	70-130		
PFPPrA	3660	Research		119	"	1902	1490	114%	70-130		
NFDHA	321	Research		23.8	"	380.4	U	84.5%	70-130		
PFEESA	328	Research		23.8	"	380.4	23.4	80.1%	70-130		
PFMPA	893	Research, Q		476	"	380.4	734	41.8%	70-130		
PFMBA	352	Research		23.8	"	380.4	46.7	80.3%	70-130		
3:3 FTCA	325	Research		23.8	"	380.4	U	85.4%	70-130		
7:3 FTCA	328	Research		23.8	"	380.4	U	86.2%	70-130		
FHUEA	321	Research		23.8	"	380.4	U	84.4%	70-130		
FOUEA	317	Research		23.8	"	380.4	2.69	82.7%	70-130		
HQ-115	326	Research		23.8	"	380.4	15.8	81.4%	70-130		
Surrogate: D-N-EtFOSA	307	Research			"	380.4		80.7%	70-130		
Surrogate: D-N-MeFOSA	288	Research			"	380.4		75.8%	70-130		
Surrogate: D7-N-MeFOSE	181	Research, Q			"	380.4		47.6%	70-130		
Surrogate: D9-N-EtFOSE	134	Research, Q			"	380.4		35.3%	70-130		
Surrogate: MHFPO-DA	295	Research			"	380.4		77.6%	70-130		
Surrogate: MPFBA	389	Research			"	380.4		102%	70-130		
Surrogate: MSPFHxA	314	Research			"	380.4		82.6%	70-130		



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Project Number: [none]

Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

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US EPA Region 5 LSASD Analytical Services Branch

Batch B22C010 - Solvent Extraction

Matrix Spike (B22C010-MS1)			Source: 2202010-03		Prepared: Mar-09-22 Analyzed: Mar-10-22						
Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Surrogate: M3PFHxS	296	Research			ng/kg dry	359.9		82.3%	70-130		
Surrogate: M8PFOA	314	Research			"	380.4		82.5%	70-130		
Surrogate: M9PFNA	311	Research			"	380.4		81.7%	70-130		
Surrogate: M8PFOS	302	Research			"	364.1		82.8%	70-130		
Surrogate: M6PFDA	323	Research			"	380.4		84.9%	70-130		
Surrogate: M7PFUnA	323	Research			"	380.4		84.8%	70-130		
Surrogate: MPFDoA	320	Research			"	380.4		84.1%	70-130		
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	303	Research			"	355.7		85.2%	70-130		
Surrogate: perfluoro-(1,2-13C2)octanesulfonateC13(2)-6:2 FTS	319	Research			"	361.0		88.3%	70-130		
Surrogate: perfluoro-(1,2-13C2)decanesulfonateC13(2)-8:2 FTS	334	Research			"	364.5		91.7%	70-130		
Surrogate: D5-N-EtFOSAA	412	Research			"	380.4		108%	70-130		
Surrogate: D3-N-MeFOSAA	325	Research			"	380.4		85.5%	70-130		
Surrogate: M3PFBS	292	Research			"	353.4		82.5%	70-130		
Surrogate: M5PFPeA	330	Research			"	380.4		86.7%	70-130		
Surrogate: M4PFHpA	318	Research			"	380.4		83.5%	70-130		
Surrogate: M2PFTreA	307	Research			"	380.4		80.7%	70-130		
Surrogate: M8PFOSA	325	Research			"	380.4		85.3%	70-130		

Matrix Spike Dup (B22C010-MSD1)			Source: 2202010-03		Prepared: Mar-09-22 Analyzed: Mar-10-22						
Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorotetradecanoate	302	Research		22.6	ng/kg dry	361.4	14.1	79.6%	70-130	3.18	30
perfluorotridecanoate	306	Research		22.6	"	361.4	13.1	81.0%	70-130	1.65	30
perfluorododecanoate	317	Research		22.6	"	361.4	22.8	81.4%	70-130	0.0962	30
perfluoroundecanoate	320	Research		22.6	"	361.4	29.2	80.4%	70-130	5.20	30
perfluorodecanoate	330	Research		22.6	"	361.4	49.3	77.6%	70-130	4.77	30
perfluoro-1-decanesulfonate (PFDS)	336	Research		22.6	"	361.4	6.53	91.2%	70-130	6.50	30
perfluorooctyl sulfonate	628	Research		22.6	"	361.4	374	70.2%	70-130	16.6	30
perfluorononanoate	319	Research		22.6	"	361.4	45.4	75.8%	70-130	5.56	30
perfluoro-1-nonanesulfonate (PFNS)	305	Research		22.6	"	361.4	U	84.4%	70-130	1.75	30
perfluorooctanoate	323	Research		22.6	"	361.4	43.3	77.4%	70-130	5.79	30
perfluoro-1-heptanesulfonate (PFHpS)	295	Research		22.6	"	361.4	4.96	80.4%	70-130	2.44	30



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Chicago IL, 60604

Project: 3M Cordova
Project Number: [none]
Project Manager: Jennifer Wilson

Reported:
Apr-28-22 08:37

PFC - Quality Control

US EPA Region 5 LSASD Analytical Services Branch

Batch B22C010 - Solvent Extraction

Matrix Spike Dup (B22C010-MSD1)

Source: 2202010-03

Prepared: Mar-09-22 Analyzed: Mar-10-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
perfluorohexyl sulfonate	288	Research		22.6	ng/kg dry	361.4	5.43	78.2%	70-130	3.43	30
perfluoroheptanoate	298	Research		22.6	"	361.4	19.9	76.9%	70-130	7.05	30
perfluorohexanoate	294	Research		22.6	"	361.4	13.7	77.6%	70-130	6.72	30
perfluorobutyl sulfonate	300	Research		22.6	"	361.4	22.2	76.9%	70-130	4.39	30
perfluoro-1-pentanesulfonate (PFPeS)	288	Research		22.6	"	361.4	4.16	78.5%	70-130	0.845	30
perfluoropentanoate	1550	Research		113	"	1807	83.0	81.4%	70-130	3.77	30
perfluorobutanoate	2880	Research		113	"	1807	1340	85.1%	70-130	17.9	30
perfluoro-1-octanesulfonamide (FOSA)	313	Research		22.6	"	361.4	3.52	85.8%	70-130	5.45	30
1H,1H,2H,2H-perfluorohexane sulfonate (4:2 FTS)	322	Research		22.6	"	361.4	U	89.2%	70-130	6.61	30
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	333	Research		22.6	"	361.4	4.19	90.9%	70-130	5.71	30
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	339	Research		22.6	"	361.4	4.91	92.3%	70-130	3.77	30
N-EtFOSAA	408	Research		22.6	"	361.4	U	113%	70-130	1.11	30
N-MeFOSAA	304	Research		22.6	"	361.4	U	84.0%	70-130	3.13	30
5:3 FTCA	304	Research		22.6	"	361.4	U	84.3%	70-130	0.358	30
PFDoS	271	Research		22.6	"	361.4	U	75.0%	70-130	6.08	30
NMeFOSA	301	Research		22.6	"	361.4	U	83.2%	70-130	0.614	30
NEtFOSA	294	Research		22.6	"	361.4	U	81.3%	70-130	1.45	30
NMeFOSE	177	L, Research, Q		22.6	"	361.4	U	48.9%	70-130	4.63	30
NEtFOSE	129	Research, L, Q		22.6	"	361.4	U	35.7%	70-130	1.82	30
HFPO-DA	279	Research		22.6	"	361.4	9.25	74.6%	70-130	2.31	30
ADONA	296	Research		22.6	"	361.4	U	81.8%	70-130	1.59	30
9Cl-PF3ONS	305	Research		22.6	"	361.4	3.46	83.5%	70-130	2.73	30
11Cl-PF3OUdS	298	Research		22.6	"	361.4	U	82.4%	70-130	3.44	30
PFPrA	3260	Research		113	"	1807	1490	97.6%	70-130	15.4	30
NFDHA	312	Research		22.6	"	361.4	U	86.3%	70-130	2.09	30
PFEESA	312	Research		22.6	"	361.4	23.4	79.7%	70-130	0.479	30
PFMPA	810	Research, Q		452	"	361.4	734	21.1%	70-130	65.8	30
PFMBA	332	Research		22.6	"	361.4	46.7	79.0%	70-130	1.53	30
3:3 FTCA	308	Research		22.6	"	361.4	U	85.1%	70-130	0.319	30



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PFC - Quality Control

US EPA Region 5 LSASD Analytical Services Branch

Batch B22C010 - Solvent Extraction

Matrix Spike Dup (B22C010-MSD1)

Source: 2202010-03

Prepared: Mar-09-22 Analyzed: Mar-10-22

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
7:3 FTCA	305	Research		22.6	ng/kg dry	361.4	U	84.5%	70-130	1.97	30
FHUEA	310	Research		22.6	"	361.4	U	85.7%	70-130	1.55	30
FOUEA	311	Research		22.6	"	361.4	2.69	85.4%	70-130	3.26	30
HQ-115	308	Research		22.6	"	361.4	15.8	80.9%	70-130	0.645	30
Surrogate: D-N-EtFOSA	312	Research			"	361.4		86.4%	70-130		
Surrogate: D-N-MeFOSA	310	Research			"	361.4		85.7%	70-130		
Surrogate: D7-N-MeFOSE	190	Research, Q			"	361.4		52.6%	70-130		
Surrogate: D9-N-EtFOSE	130	Research, Q			"	361.4		35.9%	70-130		
Surrogate: MHFPO-DA	300	Research			"	361.4		83.0%	70-130		
Surrogate: MPFBA	371	Research			"	361.4		103%	70-130		
Surrogate: M5PFHxA	307	Research			"	361.4		84.9%	70-130		
Surrogate: M3PFHxS	289	Research			"	341.8		84.5%	70-130		
Surrogate: M8PFOA	307	Research			"	361.4		84.8%	70-130		
Surrogate: M9PFNA	304	Research			"	361.4		84.2%	70-130		
Surrogate: M8PFOS	293	Research			"	345.8		84.8%	70-130		
Surrogate: M6PFDA	315	Research			"	361.4		87.2%	70-130		
Surrogate: M7PFUnA	314	Research			"	361.4		87.0%	70-130		
Surrogate: MPFDoA	322	Research			"	361.4		89.1%	70-130		
Surrogate: perfluoro(1,2-13C2)hexanesulfonateC13(2)-4:	312	Research			"	337.9		92.3%	70-130		
Surrogate: perfluoro- (1,2-13C2)octanesulfonateC13(2)-6:2 FTS	323	Research			"	342.9		94.1%	70-130		
Surrogate: perfluoro- (1,2-13C2)decanesulfonateC13(2)-8:2 FTS	333	Research			"	346.2		96.3%	70-130		
Surrogate: D5-N-EtFOSAA	398	Research			"	361.4		110%	70-130		
Surrogate: D3-N-MeFOSAA	312	Research			"	361.4		86.4%	70-130		
Surrogate: M3PFBS	281	Research			"	335.7		83.8%	70-130		
Surrogate: M5PFPeA	320	Research			"	361.4		88.6%	70-130		
Surrogate: M4PFHpA	307	Research			"	361.4		85.0%	70-130		
Surrogate: M2PFTrEA	320	Research			"	361.4		88.7%	70-130		
Surrogate: M8PFOSA	325	Research			"	361.4		90.0%	70-130		



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Notes and Definitions

Research	Samples analyzed while the method is under development and contain results of unknown quality. No SOP in place at time of data release. Client was notified and accepted the terms as stated.
L	The identification of the analyte is acceptable; the reported value may be biased low. The actual value is expected to be greater than the reported value.
K	The identification of the analyte is acceptable; the reported value may be biased high. The actual value is expected to be less than the reported value.
J	The identification of the analyte is acceptable; the reported value is an estimate.
I	Ion ratio criteria is not met for this analyte
U	Not Detected
NR	Not Reported
Q	QC limit Exceeded